

A1-F18AC-FIM-000

15 December 1987

Change 9 - 1 June 1997

TECHNICAL MANUAL

ORGANIZATIONAL MAINTENANCE FAULT ISOLATION MANUAL

**NAVY MODEL
F/A-18A/B/C/D
161353 AND UP**

This volume is one of two volumes and is incomplete without A1-F18AC-FIM-010.

This volume contains WP001 00 through WP130 00.

DISTRIBUTION STATEMENT C. Distribution authorized to US Government agencies and their contractors to protect publications required for official use or for administrative or operational purposes only 15 September 1987. Other requests for this document shall be referred to Commanding Officer, Naval Air Technical Services Facility, 700 Robbins Avenue, Philadelphia, PA 19111-5097.

DESTRUCTION NOTICE - For unclassified, limited documents, destroy by any method that will prevent disclosure of contents or reconstruction of the document.

*Published by Direction of the
Commander, Naval Air Systems Command*

0801LP0165260

NATEC ELECTRONIC MANUAL

A1-F18AC-FIM-000

Change 9 - 1 June 1997

Page A

NUMERICAL INDEX OF EFFECTIVE WORK PACKAGES/PAGES

List of Current Changes

Original.....0.....15 Dec 87	Change.....1.....1 Aug 89	Change.....2.....15 Feb 92	Change.....3.....1 Jun 92
Change.....4.....1 Feb 93	Change.....5.....1 Nov 93	Change.....6.....15 Jun 94	Change.....7.....15 Aug 94
Change.....8.....15 Jul 95	Change.....9.....1 Jun 97		

Only those work packages/pages assigned to the manual are listed in this index. Insert Change 9, dated 1 June 1997. Dispose of superseded work packages/pages. Superseded classified work packages/pages shall be destroyed in accordance with applicable security regulations. If changed pages are issued to a work package, insert the changed pages in the applicable work package. The portion of text affected in a change or revision is indicated by change bars or the change symbol "R" in the outer margin of each column of text. Changes to illustrations are indicated by pointing hands, change bars, or MAJOR CHANGE symbols. Changes to diagrams may be indicated by shaded borders.

Total number of pages in this manual is 360 consisting of the following:

WP/Page Number	Change Number	WP/Page Number	Change Number	WP/Page Number	Change Number	WP/Page Number	Change Number
Title.....	9	2.....	0	7.....	0	036 00 deleted.....	0
A.....	9	3.....	0	8.....	0	037 00 deleted.....	0
B.....	8	4.....	0	022 00		038 00 deleted.....	0
C.....	8	5.....	0	1.....	0	039 00 deleted.....	0
TPDR-1.....	9	6.....	0	2.....	0	040 00 deleted.....	0
TPDR-2 blank.....	9	7.....	0	3.....	0	041 00 deleted.....	0
001 00		8 blank.....	0	4.....	0	042 00 deleted.....	0
1.....	8	007 00 deleted.....	0	5.....	0	043 00 deleted.....	0
2 blank.....	8	008 00 deleted.....	0	6.....	0	044 00 deleted.....	0
001 01		009 00 deleted.....	0	7.....	0	045 00 deleted.....	0
1.....	8	010 00		8.....	0	046 00 deleted.....	0
2.....	8	1.....	0	9.....	0	047 00 deleted.....	0
3.....	8	2.....	0	10 blank.....	0	048 00 deleted.....	0
4 blank.....	8	011 00 deleted.....	0	023 00		049 00 deleted.....	0
002 00		012 00		1.....	0	050 00 deleted.....	0
1.....	9	1.....	2	2.....	0	051 00 deleted.....	0
2.....	9	2.....	2	3.....	0	052 00 deleted.....	0
3.....	9	3.....	2	4.....	0	053 00 deleted.....	0
4.....	9	4.....	2	5.....	0	054 00 deleted.....	0
5.....	9	5.....	2	6.....	0	055 00 deleted.....	0
6.....	9	6.....	2	7.....	0	056 00	
7.....	9	7.....	2	8.....	0	1.....	0
8.....	9	8.....	2	9.....	0	2.....	0
9.....	9	013 00 deleted.....	0	10.....	0	3.....	0
10 blank.....	9	014 00 deleted.....	0	024 00 deleted.....	0	4.....	0
003 00 deleted.....	0	015 00 deleted.....	0	025 00 deleted.....	0	5.....	0
004 00		016 00 deleted.....	0	026 00 deleted.....	0	6.....	0
1.....	0	017 00 deleted.....	0	027 00 deleted.....	0	057 00 deleted.....	0
2.....	0	018 00 deleted.....	0	028 00 deleted.....	0	058 00 deleted.....	0
3.....	0	019 00 deleted.....	0	029 00 deleted.....	0	059 00 deleted.....	0
4.....	0	020 00 deleted.....	0	030 00 deleted.....	0	060 00 deleted.....	0
005 00		021 00		031 00 deleted.....	0	061 00 deleted.....	0
1.....	0	1.....	0	032 00		062 00 deleted.....	0
2.....	0	2.....	0	1.....	8	063 00 deleted.....	0
3.....	0	3.....	0	2.....	8	064 00 deleted.....	0
4.....	0	4.....	0	033 00 deleted.....	0	065 00 deleted.....	0
006 00		5.....	0	034 00 deleted.....	0	066 00 deleted.....	0
1.....	0	6.....	0	035 00 deleted.....	0	067 00 deleted.....	0

A1-F18AC-FIM-000

Change 8 - 15 July 1995

Page B

WP/Page Number	Change Number	WP/Page Number	Change Number	WP/Page Number	Change Number	WP/Page Number	Change Number
068 00 deleted	0	6	0	7	6	3	0
069 00 deleted	0	081 00	0	8	8	4	0
070 00 deleted	0	1	0	9	6	5	0
071 00 deleted	0	2	0	10	6	6	0
072 00 deleted	0	3	0	11	6	104 00	0
073 00	0	4	0	12 blank	6	1	6
1	0	5	0	088 00 deleted	0	2	6
2	0	6	0	089 00	0	3	6
3	0	082 00	0	1	8	4	6
4	0	1	8	2	0	5	6
5	0	2	8	3	6	6	6
6	0	3	8	4	6	7	6
7	0	4	8	4A	6	8	6
8	0	5	8	4B blank	6	105 00	0
9	0	6	8	5	0	1	0
10 blank	0	083 00 deleted	0	6	0	2	0
074 00 deleted	0	084 00	0	7	0	3	0
1	6	1	0	8	8	4	0
2	6	2	0	9	0	5	0
3	6	3	0	10	0	6 blank	0
4	6	4	0	11	0	106 00 deleted	0
4	6	085 00	0	12	0	107 00	0
5	6	1	0	13	0	1	0
6	6	2 blank	0	14	0	2	0
7	6	085 01	0	090 00	0	3	0
8	6	1	4	1	0	4	0
9	6	2	4	2	0	108 00	0
10 blank	6	3	4	3	0	1	0
076 00	0	4	4	4	0	2	0
1	0	5	4	091 00 deleted	0	3	0
2	0	6 blank	4	092 00	0	4	0
3	0	085 02	0	1	0	109 00	0
4	0	1	4	2	0	1	0
5	0	2	4	3	0	2	0
6	0	3	4	4	0	3	0
077 00	0	4	4	093 00 deleted	0	4 blank	0
1	0	5	4	094 00 deleted	0	110 00	0
2	0	6	4	095 00 deleted	0	1	0
3	0	086 00	0	096 00 deleted	0	2	0
4	0	1	6	097 00	0	3	0
5	0	2	6	1	0	4	0
6 blank	0	3	6	2	0	111 00	0
078 00	0	4	6	3	0	1	0
1	0	5	6	4	0	2	0
2	0	6	6	098 00 deleted	0	3	0
3	0	7	6	099 00 deleted	0	4	0
4	0	8	6	100 00	0	112 00 deleted	0
5	0	9	6	1	0	113 00	0
6 blank	0	10	6	2	0	1	1
079 00 deleted	0	087 00	0	3	0	2	1
1	0	1	8	4	0	3	1
2	0	2	6	101 00 deleted	0	4	1
3	0	3	6	102 00 deleted	0	114 00	0
4	0	4	6	103 00	0	1	5
5	0	5	6	1	0	2 blank	5
		6	6	2	0		

A1-F18AC-FIM-000

Change 8 - 15 July 1995

Page C

WP/Page Number	Change Number	WP/Page Number	Change Number	WP/Page Number	Change Number	WP/Page Number	Change Number
114 01		6 blank	8	4	2		
1.....	0	117 00		127 00			
2.....	0	1.....	2	1.....	7		
3.....	0	2.....	2	2.....	7		
4.....	0	3.....	2	3.....	7		
5.....	0	4 blank	2	4.....	7		
6 blank	0	117 01		128 00 deleted	8		
114 02		1.....	0	129 00			
1.....	8	2.....	0	1.....	8		
2.....	8	118 00		2.....	8		
3.....	8	1.....	5	3.....	8		
4.....	8	2.....	5	4.....	8		
5.....	8	3.....	5	130 00 deleted	0		
6.....	8	4 blank	5				
7.....	8	118 01					
8.....	8	1.....	0				
9.....	8	2.....	0				
10.....	8	119 00					
11.....	8	1.....	2				
12.....	8	2.....	2				
13.....	8	3.....	2				
14.....	8	4.....	2				
15.....	8	120 00					
16.....	8	1.....	5				
17.....	8	2.....	5				
18.....	8	3.....	5				
19.....	8	4.....	5				
20 blank	8	5.....	5				
114 03		6 blank	5				
1.....	8	121 00					
2.....	8	1.....	5				
3.....	8	2.....	5				
4.....	8	3.....	5				
5.....	8	4.....	5				
6.....	8	122 00					
115 00		1.....	5				
1.....	2	2.....	5				
2.....	2	3.....	5				
3.....	2	4.....	5				
4.....	2	5.....	5				
115 01		6 blank	5				
1.....	8	123 00					
2.....	8	1.....	1				
3.....	8	2.....	1				
4.....	8	124 00					
116 00		1.....	2				
1.....	2	2.....	2				
2.....	2	3.....	2				
3.....	2	4.....	2				
4 blank	2	5.....	2				
116 01		6.....	2				
1.....	8	125 00 deleted	0				
2.....	8	126 00					
3.....	8	1.....	2				
4.....	8	2.....	2				
5.....	8	3.....	2				

LIST OF TECHNICAL PUBLICATION DEFICIENCY REPORTS INCORPORATED**ORGANIZATIONAL MAINTENANCE****FAULT ISOLATION MANUAL**

This WP supersedes TPDR WP, dated 15 July 1995.



-
1. The TPDRs listed below have been incorporated in this issue.

IDENTIFICATION NUMBER/ QA SEQUENCE NUMBER	LOCATION
R09637-97-0001	WP002 00



ALPHABETICAL INDEX

ORGANIZATIONAL MAINTENANCE

FAULT ISOLATION MANUAL

This WP supersedes WP001 00, dated 15 August 1994.

Title	WP Number
Introduction.....	002 00
Diagrams	002 00
Effectivities.....	002 00
Illustrated Parts Breakdown.....	002 00
Manual Issue Date.....	002 00
Navy (AN) Standard/Common Name Nomenclature	002 00
Purpose.....	002 00
Quality Assurance Procedures	002 00
Record of Applicable Technical Directives.....	002 00
Requisitioning and Distribution of NAVAIR Technical Publications	002 00
Technical Directives.....	002 00
Technical Publications Deficiency Report (TPDR)	002 00
Test Procedures.....	002 00
Troubleshooting.....	002 00
Troubleshooting Procedures (WP004 00 AND UP)	

WORK PACKAGE INDEX**ORGANIZATIONAL MAINTENANCE****FAULT ISOLATION MANUAL**

This WP supersedes WP001 01, dated 15 February 1992.

WP Number	Title	WP Number	Title
001 00	Alphabetical Index	039 00	Deleted
001 01	Work Package Index	040 00	Deleted
002 00	Introduction	041 00	Deleted
003 00	Deleted	042 00	Deleted
004 00	Troubleshooting Procedure	043 00	Deleted
005 00	Troubleshooting Procedure	044 00	Deleted
006 00	Troubleshooting Procedure	045 00	Deleted
007 00	Deleted	046 00	Deleted
008 00	Deleted	047 00	Deleted
009 00	Deleted	048 00	Deleted
010 00	Troubleshooting Procedure	049 00	Deleted
011 00	Deleted	050 00	Deleted
012 00	Troubleshooting Procedure	051 00	Deleted
013 00	Deleted	052 00	Deleted
014 00	Deleted	053 00	Deleted
015 00	Deleted	054 00	Deleted
016 00	Deleted	055 00	Deleted
017 00	Deleted	056 00	Troubleshooting Procedure
018 00	Deleted	057 00	Deleted
019 00	Deleted	058 00	Deleted
020 00	Deleted	059 00	Deleted
021 00	Troubleshooting Procedure	060 00	Deleted
022 00	Troubleshooting Procedure	061 00	Deleted
023 00	Troubleshooting Procedure	062 00	Deleted
024 00	Deleted	063 00	Deleted
025 00	Deleted	064 00	Deleted
026 00	Deleted	065 00	Deleted
027 00	Deleted	066 00	Deleted
028 00	Deleted	067 00	Deleted
029 00	Deleted	068 00	Deleted
030 00	Deleted	069 00	Deleted
031 00	Deleted	070 00	Deleted
032 00	Troubleshooting Procedure	071 00	Deleted
033 00	Deleted	072 00	Deleted
034 00	Deleted	073 00	Troubleshooting Procedure
035 00	Deleted	074 00	Deleted
036 00	Deleted	075 00	Troubleshooting Procedure
037 00	Deleted	076 00	Troubleshooting Procedure
038 00	Deleted	077 00	Troubleshooting Procedure

WP Number	Title	WP Number	Title
078 00	Troubleshooting Procedure	124 00	Troubleshooting Procedure
079 00	Deleted	125 00	Deleted
080 00	Troubleshooting Procedure	126 00	Troubleshooting Procedure
081 00	Troubleshooting Procedure	127 00	Troubleshooting Procedure
082 00	Troubleshooting Procedure	128 00	Deleted
083 00	Deleted	129 00	Troubleshooting Procedure
084 00	Troubleshooting Procedure	130 00	Deleted
085 00	Troubleshooting Procedure	131 00	Deleted
085 01	Troubleshooting Procedure	132 00	Deleted
085 02	Troubleshooting Procedure	133 00	Deleted
086 00	Troubleshooting Procedure	134 00	Deleted
087 00	Troubleshooting Procedure	135 00	Deleted
088 00	Deleted	136 00	Deleted
089 00	Troubleshooting Procedure	137 00	Deleted
090 00	Troubleshooting Procedure	138 00	Deleted
091 00	Deleted	139 00	Troubleshooting Procedure
092 00	Troubleshooting Procedure	139 01	Troubleshooting Procedure
093 00	Deleted	139 02	Troubleshooting Procedure
094 00	Deleted	140 00	Troubleshooting Procedure
095 00	Deleted	141 00	Deleted
096 00	Deleted	142 00	Deleted
097 00	Troubleshooting Procedure	143 00	Deleted
098 00	Deleted	144 00	Deleted
099 00	Deleted	145 00	Deleted
100 00	Troubleshooting Procedure	146 00	Deleted
101 00	Deleted	147 00	Deleted
102 00	Deleted	148 00	Deleted
103 00	Troubleshooting Procedure	149 00	Deleted
104 00	Troubleshooting Procedure	150 00	Deleted
105 00	Troubleshooting Procedure	151 00	Deleted
106 00	Deleted	152 00	Troubleshooting Procedure
107 00	Troubleshooting Procedure	153 00	Troubleshooting Procedure
108 00	Troubleshooting Procedure	154 00	Troubleshooting Procedure
109 00	Troubleshooting Procedure	155 00	Deleted
110 00	Troubleshooting Procedure	156 00	Deleted
111 00	Troubleshooting Procedure	157 00	Deleted
112 00	Deleted	158 00	Deleted
113 00	Troubleshooting Procedure	159 00	Deleted
114 00	Troubleshooting Procedure	160 00	Troubleshooting Procedure
114 01	Troubleshooting Procedure	161 00	Troubleshooting Procedure
114 02	Troubleshooting Procedure	161 01	Troubleshooting Procedure
114 03	Troubleshooting Procedure	161 02	Troubleshooting Procedure
115 00	Troubleshooting Procedure	162 00	Troubleshooting Procedure
115 01	Troubleshooting Procedure	163 00	Troubleshooting Procedure
116 00	Troubleshooting Procedure	164 00	Troubleshooting Procedure
116 01	Troubleshooting Procedure	165 00	Troubleshooting Procedure
117 00	Troubleshooting Procedure	166 00	Troubleshooting Procedure
117 01	Troubleshooting Procedure	167 00	Troubleshooting Procedure
118 00	Troubleshooting Procedure	168 00	Deleted
118 01	Troubleshooting Procedure	169 00	Deleted
119 00	Troubleshooting Procedure	170 00	Deleted
120 00	Troubleshooting Procedure	171 00	Deleted
121 00	Troubleshooting Procedure	172 00	Deleted
122 00	Troubleshooting Procedure	173 00	Deleted
123 00	Troubleshooting Procedure	174 00	Troubleshooting Procedure

A1-F18AC-FIM-000

Change 8

001 01

Page 3/(4 blank)

WP Number	Title
175 00	Troubleshooting Procedure
176 00	Deleted

WP Number	Title
177 00	Troubleshooting Procedure
178 00	Deleted

INTRODUCTION

ORGANIZATIONAL MAINTENANCE

TESTING AND TROUBLESHOOTING

FAULT ISOLATION MANUAL

This WP supersedes WP002 00, dated 15 July 1995.

1. PURPOSE.

2. This manual provides the data required by the technician to do testing and troubleshooting of the system.

3. REQUISITIONING AND DISTRIBUTION OF NAVAIR TECHNICAL PUBLICATIONS.

4. Procedures to be used by Naval Activities and other Department of Defense organizations requiring NAVAIR technical publications are defined in the NAVAL AIR SYSTEMS COMMAND TECHNICAL MANUAL PROGRAM manual, NAVAIR 00-25-100 and NAVAIRINST 5605.5, Distribution of aeronautic technical publications. To automatically receive future changes and revisions to NAVAIR technical manuals, an activity must be established on the Automatic Distribution Requirements List (ADRL) maintained by the Naval Air Technical Services Facility (NAVAIRTECHSERVFAC). To become established on the ADRL, notify your activity central technical publications librarian. If your activity does not have a library, you may establish your automatic distribution requirements by contacting the Commanding Officer, NAVAIRTECHSERVFAC, Attn: ADRL REQUEST, 700 Robbins Avenue, Philadelphia, PA 19111-5097. Annual reconfirmation of these requirements are necessary to remain on automatic distribution. Please use your NAVAIRTECHSERVFAC assigned account number whenever referring to automatic distribution requirements.

If additional or replacement copies of this manual are required with no attendant changes in the ADRL, they may be ordered by submitting a DD 1348 requisition directly to the Commanding Officer, Naval Publications and Forms Center, 5801 Tabor Road, Philadelphia, PA 19120-5099.

5. MANUAL ISSUE DATE.

6. The date on the title page is the copy freeze date. No additions, deletions, or changes are made after the manual issue date except last minute safety of flight or required maintenance changes. Data collected after the manual issue date will be included in later changes or revisions of the manual.

7. EFFECTIVITIES.

8. Effectivity notes on manual title pages, work package title pages, and within a work package indicate the aircraft or software program to which the data applies. If no effectivity note appears on the work package title page, the work package has the same effectivity as shown on the manual title page. The effectivity notes may use:

- a. Type, model, and series

NOTE

F/A-18D aircraft after bureau number 164967 was referred to as bureau number F/A-18D D-140. Now, F/A-18D aircraft after bureau number 164967 is 165409.

- b. Bureau number (tail number)

c. Combination of type, model, series, and bureau numbers

f. Configuration/identification number

d. Part number or serial number

9. The table below shows examples of effectivity notes and their meanings:

e. Technical directive number

Effectivity Note Examples

Effectivity Note	Definition
160777 AND UP	Applicable to all F/A-18A, F/A-18B, F/A-18C and F/A-18D for bureau numbers listed.
F/A-18A, F/A-18B	Applicable to all F/A-18A and F/A-18B.
F/A-18C, F/A-18D	Applicable to all F/A-18C and F/A-18D.
F/A-18A	Applicable to all F/A-18A, but not F/A-18B, F/A-18C and F/A-18D.
F/A-18B	Applicable to all F/A-18B, but not F/A-18A, F/A-18C, and F/A-18D.
F/A-18C	Applicable to all F/A-18C, but not F/A-18A, F/A-18B, and F/A-18D.
F/A-18D	Applicable to all F/A-18D, but not F/A-18A, F/A-18B, and F/A-18C.
F/A-18A, F/A-18C	Applicable to all F/A-18A and F/A-18C, but not to F/A-18B and F/A-18D.
F/A-18B, F/A-18D	Applicable to all F/A-18B and F/A-18D, but not to F/A-18A and F/A-18C.
F/A-18A 160775, 160777 THRU 160782	Only applicable to some bureau numbers of F/A-18A. Not applicable to any F/A-18B, even if a F/A-18B bureau number is within the numbers listed.
F/A-18C 163427, 163430 THRU 163456	Only applicable to some bureau numbers of F/A-18C. Not applicable to any F/A-18D, even if a F/A-18D bureau number is within the numbers listed.
F/A-18B 160784 AND UP	Only applicable to some bureau numbers of F/A-18B. Not applicable to any F/A-18A, even if an F/A-18A bureau number is within the numbers listed.
F/A-18D 163434 THRU 163457	Only applicable to some bureau numbers of F/A-18D. Not applicable to any F/A-18C, even if a F/A-18C bureau number is within the numbers listed.
F/A-18B 160784 AND UP, F/A-18D	Applicable to some bureau numbers of F/A-18B. Not applicable to any F/A-18A, even if an F/A-18A bureau number is within the numbers listed. Also applicable to all F/A-18D aircraft.

Effectivity Note Examples (Continued)

Effectivity Note	Definition
F/A-18C, F/A-18D 163434 THRU 163457	Applicable to all F/A-18C aircraft. Applicable to some bureau numbers of F/A-18D.
F/A-18D D-140 AND UP OR F/A-18D 165409 AND UP	Applicable to all F/A-18D aircraft after bureau number 164967.
160775 THRU 160785 BEFORE F/A-18 AFC 772	Applicable to F/A-18A and F/A-18B for bureau numbers listed, before modification by technical directive.
161213 AND UP; ALSO 160775 THRU 160785 AFTER F/A-18 AFC 772	Applicable to aircraft modified during production; also applicable when affected aircraft have been modified by technical directive.
160775 THRU 160785; WHEN NO. 2 CONTROL PANEL P/N XXXX-X IS INSTALLED	Applicable to F/A-18A and F/A-18B for bureau numbers listed if panel P/N XXXX-X is installed. (Configuration before AVC)
161213 AND UP; ALSO 160775 THRU 160785; WHEN NO. 2 CONTROL PANEL P/N XXXX-Y (AVC-102) IS INSTALLED	Applicable to aircraft modified during production; also applicable to aircraft components modified to the production configuration by technical directive. (Configuration after AVC)
P/N MBEU65101-9, MBEU65101-10 & MBEU65105-3	Applicable to assemblies which are interchangeable between aircraft.
ENGINE NO. 215101 THRU 215109	Applicable to assemblies which are interchangeable between aircraft, but configurations can not be identified by part number.
CONFIG/IDENT NUMBER 84A	The CONFIG/IDENT Number is the program load identification number which identifies the software program loaded in specific programmable units. Refer to A1-F18AC-SCM-000 for CONFIG/IDENT Number tables.

10. TECHNICAL DIRECTIVES.

11. Technical directives are documents which provide instructions to incorporate and record retrofit configuration modifications or inspection instructions to delivered aircraft, or aircraft components.

show the latest two authorized OFP programs. See AFC and ASC effectivity examples in Effectivity Note Example Table.

13. AIRCRAFT COMPONENT CHANGES. Technical directives which change configuration of aircraft components are listed below:

12. AIRFRAME CHANGE (AFC) AND AIRBORNE TACTICAL SOFTWARE CHANGE (ASC). Technical directives which change configuration of aircraft structure or equipment installation, i.e. AFC, will list aircraft bureau numbers in effectivity notes and show before and after the AFC. Technical directives which change configuration of operational flight programs (OFP), i.e. ASC, will list the OFP CONFIG/IDENT NUMBER in effectivity notes and

Abbrev	Directive
AAC	Aviation Armament Change for armament equipment
ACC	Aircrew System Change for aircrew survival equipment
AFC	Airframe Change for aircraft structure and equipment

Abbrev	Directive
ASC	Airborne Tactical Software for operational flight programs
AVC	Avionics Change for airborne electronic equipment, including wiring changes
AYC	Accessory Change for mechanical system
PPC	Power Plant Change for engines

14. Component changes will list part numbers in the effectivities. See AVC effectivity examples in Effectivity Note Example table.

15. RECORD OF APPLICABLE TECHNICAL DIRECTIVES.

16. The technical directives affecting this manual are listed in the Record of Applicable Technical Directives of each affected work package. Because an ASC directs all aircraft be modified within 30 days, ASC's are not listed. When all affected aircraft are modified, the before configuration is removed from the manual, and the technical directive entry is removed from the Record of Applicable Technical Directives.

17. TECHNICAL PUBLICATIONS DEFICIENCY REPORT (TPDR).

18. The TPDR (OPNAV FORM 4790/66) is the form for reporting errors and suspected omissions in the technical manuals. The TPDR WP lists the TPDRs that are incorporated in the current issue of the manual.

19. TPDR reporting procedures are in OPNAVINST 4790.2 SERIES.

20. QUALITY ASSURANCE PROCEDURES.

21. Procedures or parts of procedures which require quality assurance inspection are identified by the letters (QA) after the applicable steps. When (QA) is assigned to a step or a heading which is immediately followed by substeps, the inspection requirement is applicable to all substeps.

22. When doing maintenance in any area, a visual inspection of the area will be made for cracks,

corrosion and security of component installation before securing the area for flight.

23. TEST PROCEDURES.

24. Test procedures are done as part of malfunction isolation, during periodic inspection, or when correct system operation is to be verified.

25. Satisfactory completion of test procedures verifies correct system operation. Do steps in sequence. When doing system test procedures, make sure:

a. System Required Components identified in procedure are installed.

b. Related Systems Required identified in procedure are operative.

c. Steps are done in sequence.

d. Results are as shown in Normal Indication column, or do Remedy for Abnormal Indication.

e. Each malfunction is corrected before going to next step by repeating portion of test procedure which failed.

26. TROUBLESHOOTING.

27. TROUBLESHOOTING PROCEDURES. These procedures provide a series of steps with a NO-YES column. These steps lead to corrective action for the malfunction. Troubleshooting procedures list the data below for use as an aid when doing procedural steps:

a. Reference to a system schematic.

b. Reference to a component locator.

c. List of support equipment and materials required which will always be used in the procedure. Additional support equipment may be required.

d. An alphabetical list of components which could cause the malfunction.

28. Troubleshooting procedures (logic trees) are referenced from a test procedure Remedy for Abnormal Indication column or from Fault Reporting Manual. Logic trees are written assuming the logic below:

a. If doing a test procedure, all steps testing functions before the failed step had normal indication.

b. For an abnormal indication, only one malfunction exists.

c. All replacement components are ready for installation.

29. **CONTINUITY TESTING.** When doing continuity tests during troubleshooting, the items listed below must be tested, as applicable.

a. Loose electrical connectors and bent, broken, or recessed pins.

b. Continuity between specific pins per procedural step or system schematic.

c. Shorts between conductor and shield.

d. Shorts between conductor and surrounding pins on connectors.

e. Shield continuity per diagrams/system schematics.

30. **TROUBLESHOOTING BEYOND BIT/SYSTEM TESTING.** This is required when any of the conditions listed below exist:

a. Malfunction was not detected by Built-In Test (BIT).

b. Malfunction was not detected by a functional test procedure.

c. When a troubleshooting procedure did not correct the malfunction.

d. When a troubleshooting procedure does not exist.

31. When any of the conditions listed in paragraph 28 exist, troubleshooting procedure/logic must then be determined. Use steps listed below to aid in determining procedure/logic:

a. Use referenced system schematic or select applicable system schematic for malfunction. Use schematic for troubleshooting beyond BIT analysis as listed below:

(1) Analyze interface of system components. Determine logic wiring and/or components which may cause the malfunction. Determine when an interfacing component could cause the malfunction.

(2) When malfunction can be caused by mission computer system signal interface, analyze mission computer system integrated functions and memory inspect suspected Input/Output REF CODES (A1-F18AC-FIM-100).

b. Review VIDS/MAF (OPNAV 4790/60) in Aircraft Discrepancy Book for related malfunctions.

(1) Analyze system/related system maintenance codes reported by Nose Wheelwell Digital Display Indicator.

(2) Determine if aircraft components that have been replaced could cause malfunction.

(3) When a repeat malfunction exists, analyze previous maintenance action completed for the malfunction.

(a) When component replacement is/was done, analyze component history as listed:

1) Determine where component came from.

2) Determine previous history of component (when available).

3) Determine if similar malfunction occurred on another aircraft.

4) Determine if replaced component could be causing existing malfunction.

5) Determine if replacing component again would correct malfunction.

(b) Determine if any rigging or control procedures that have been done could cause the malfunction.

(c) Determine when rigging/boresight procedures should be done to verify system operation for malfunction.

32. **TROUBLESHOOTING IMPROVEMENTS.** When a troubleshooting procedure did not correct a malfunction and it is determined that additional or

A1-F18AC-FIM-000

Change 9

002 00

Page 6

new troubleshooting is required, submit Technical Publications Deficiency Report (TPDR) providing the information listed below:

- a. Fault descriptor for A1-F18()-FRM-000.
- b. Corrective action taken for malfunction.
- c. Logic used to isolate malfunction.
- d. Probable changes that could shorten troubleshooting time for malfunction.

33. DIAGRAMS.

34. System schematics are in A1-F18A()-()-500 series manuals.

35. ILLUSTRATED PARTS BREAKDOWN.

36. Each illustrated parts breakdown (IPB) in this manual has a parts list and illustration for the requisition, storage, authority for use and identification of parts. The illustration is integrated with, and supports, both the maintenance procedure and the parts list within each work package.

37. **PART NUMBER COLUMN.** Footnote symbols in the part number column are defined following the last part listed in each parts list (also see converted part numbers, this WP).

38. **INDENTION.** The first entry in the description column of each parts list is the figure title. This figure title identifies the parts list with the related maintenance procedure and is shown in the first indent. All parts data required to support the specific maintenance procedure is below the figure title in the second indent.

39. **COMMON NAMES.** The official nomenclature in the description column may not be the name commonly used for an item. If different from the official nomenclature, the common name is shown in parentheses in the description column immediately following the official nomenclature.

40. **COMMERCIAL AND GOVERNMENT ENTITY CODES.** Entity code or manufacturer's name and address are shown in the Description column in parentheses after the nomenclature for the item. These codes are per the Commercial and Government Entity (CAGE) Handbook H4/H8 Series. No code indicates the item is a government standard part.

41. **ATTACHING PARTS.** Attaching parts are identified by (AP) after the nomenclature of the item in the description column. Attaching parts are listed immediately following the part they attach.

42. **SPECIAL HANDLING.** Items requiring special handling such as liquid oxygen components, magnetic control items or on-board oxygen generating system (OBOGS) are identified by the acronym LOX for liquid oxygen, MAG for magnetic control and OXYGEN for on-board oxygen generating system (OBOGS) in the Description column, at the extreme right side.

43. **CONVERTED PART NUMBERS.** Some part numbers appear in the Part Number column which are different than the manufacturer's part number. These are converted part numbers. The unconverted manufacturer's part number is shown in the Description column following the manufacturer's code. Always use the part number in the Part Number column when ordering parts. If an item is not available under the listing in the Part Number column, it may be ordered using the unconverted part number found in the Description column or by using the number found on the part. Examples of special characters as they may appear in the Part Number and Description columns are shown below:

Part Number Column	Description Column
PORM	± (Plus or Minus)
DEG	° (Degree)
E	e (Lower case letter)
2	II (Roman Numeral)
0.001	.001 (Decimal)

44. **SUPERSEDED PARTS.** Superseded part numbers have been removed from the Part Number column and placed in the Description column of the superseding part (for example - supersedes 74A582090-1003). This indicates that the superseded part is usable if available through salvage, but should not be requisitioned or made.

45. **NEXT HIGHER ASSEMBLY.** Next higher assembly (NHA) data is not shown using indention. Next higher procurable assembly (NHPA) data is

shown for part numbers that have a procurable NHA. The NHPA and its assigned Source, Maintenance and Recoverability (SM&R) code are in parentheses as the last entry in the Description column. Requisition the NHPA when the part listed in the Part Number column is not available from supply. The components of assemblies that required disassembly during removal from aircraft, are footnoted in the part number column.

46. UNITS PER ASSEMBLY COLUMN (UPA). This column lists the total number of each part required per assembly or subassembly and are not necessarily the total number used in the end item of equipment. The letters AR (As Required) are used for items such as shims when the requirement may vary.

47. USABLE-ON CODES. Applicable usable-on codes are identified on the final sheet of each parts list. No entry in the Use On column indicates parts are applicable to all configurations supported by this parts list.

48. ALTERNATE OR EQUIVALENT PARTS. An asterisk (*), in the Use On column, identifies alternate parts or equivalent parts that are interchangeable. When a letter code is followed by an asterisk in the Use On column, only the parts with the same letter code are interchangeable. An alternate part may be used when preferred part is not available. The asterisk is omitted for the preferred part(s). Equivalent parts are fully interchangeable. No equivalent part is preferred over

another. All equivalent parts are identified by asterisks.

49. SOURCE, MAINTENANCE AND RECOVERABILITY (SM&R) CODE COLUMN. The codes used in this column are assigned per NAVAIRINST 4423.3 SERIES and NAVSUPINST 4423.14 SERIES which contain definitions. A dash (-) is shown in the SM&R code column when no code has been assigned. The Aviation Supply Office P2300 series publication is to be used for the most current SM&R Code assignment information if doubt exists as to the validity of any SM&R Code listed in an IPB. Refer to figure 1 for SM&R code explanations.

50. PARTS LIST INDEX MANUAL, A1-F18AC-IPB-450. This manual has a numerical index of part numbers and a reference designation index for use with aircraft organizational maintenance manuals. When reference designations or part numbers are known, the index locates specific maintenance instructions and parts data.

51. NAVY (AN) STANDARD/COMMON NAME NOMENCLATURE.

52. When an item has both Navy (AN) standard and common name nomenclature assigned, the common name nomenclature will be used in text and on illustrations. Full Navy (AN) standard nomenclature will be used in the Illustrated Parts Breakdown (IPB).

SOURCE				MAINTENANCE					
				REMOVE/REPLACE		REPAIR			
1st POSITION		2nd POSITION		3rd POSITION		4th POSITION			
P	PROCURE	A	STOCKED	O	REPLACE OR USE AT ORGANIZATIONAL LEVEL	Z	NO REPAIR (CONSUMABLE)		
		B	INSURANCE BUY						
		C	CURE-DATED ITEM						
		D	INITIAL OUTFITTING	F H G	REPLACE OR USE AT IMA LEVEL INTERMEDIATE AFLOAT INTERMEDIATE ASHORE INTERMEDIATE AFLOAT/ ASHORE	B	RECONDITION BY ADJUSTMENT, CALIBRATION, LUBRICATION, PLATING, ETC.		
		E	GSE/STOCKED						
		F	GSE/NOT STOCKED						
		G	SUSTAINED SUPPORT						
K	REPAIR KIT COMPO- NENT	D	DEPOT		REPLACE OR USE AT DEPOT	O	REPAIR AT ORGANIZATIONAL LEVEL		
		F	ORGANIZATIONAL/IMA				REPAIR AT IMA LEVEL		
		B	BOTH KITS				INTERMEDIATE AFLOAT INTERMEDIATE ASHORE INTERMEDIATE AFLOAT/ASHORE		
M A	MANUFAC- TURE	O	ORGANIZATIONAL	D		F H G	INTERMEDIATE AFLOAT INTERMEDIATE ASHORE INTERMEDIATE AFLOAT/ASHORE		
		F	INTERMEDIATE AFLOAT						
	H	INTERMEDIATE ASHORE							
	GSE/NOT STOCKED	G	INTERMEDIATE AFLOAT/ASHORE						
		D	DEPOT						
X	MISCELLA- NEOUS	A	USE NEXT HIGHER ASSEMBLY	L	SPECIALIZED IMA REPAIR SITE	D	REPAIR AT DEPOT OR COM- MERCIAL		
		B	OBTAIN FROM SALVAGE OR ONE TIME BUY	Z	NOT AUTHORIZED TO BE REMOVED OR RE- PLACED	L	REPAIR AT SPE- CIALIZED IMA SITE		
		C	DIAGRAM-SCHEMATICS, INSTALLATION DRAWINGS						

Figure 1. SM&R Code Explanation

RECOVERABILITY		SERVICE OPTION	
5th POSITION		6th POSITION	
Z	NON-REPAIRABLE ITEM. CONDEMN AND DISPOSE AT LEVEL INDICATED IN 3rd POSITION.	1 2 3	APPLIES TO ENGINES ONLY. IDENTIFIES THE HIGHEST (1) TO LOWEST (3) LEVEL OF MAINTENANCE WHICH CAN REPLACE (3rd POSITION OF SMR CODE) THE ITEM.
O	REPAIRABLE ITEM. CONDEMN AND DISPOSE AT ORGANIZATIONAL LEVEL.	6	NORMALLY PROCURED COMMERCIAL BUT ORGANIC CAPABILITY EXISTS AT NARF FOR EMERGENCY STOP GAP REQUIREMENTS.
F H G	REPAIRABLE ITEM. CONDEMN AND DISPOSE AT IMA LEVEL INDICATED	E	1 LEVEL REPAIR NOT AUTHORIZED BUT 1 LEVEL MUST VALIDATE FAILURE PRIOR TO BCM TO DEPOT.
	INTERMEDIATE AFLOAT	J	DESIGNATES INTER-SERVICE DLR, PER NAVY MP CONSIDERED COMPLETELY REPAIRABLE BELOW DEPOT LEVEL.
	INTERMEDIATE ASHORE	8	SAME AS J ABOVE EXCEPT USED FOR ENGINES ONLY. APPLIES TO 2nd DEGREE ENG. MAINTENANCE LEVEL.
G	INTERMEDIATE AFLOAT/ASHORE		
D	REPAIRABLE ITEM. CONDEMN AND DISPOSE AT DEPOT OR CONTRACTOR FACILITY.	9	SAME AS J ABOVE EXCEPT USED FOR ENGINES ONLY. APPLIES TO 3rd DEGREE ENG. MAINTENANCE LEVEL.
L	REPAIRABLE ITEM. CONDEMN AND DISPOSE AT SPECIALIZED IMA REPAIR SITE.	P	DENOTES ITEMS WHICH ARE PROGRESSIVELY REPAIRED AT ORG, INT, AND DEPOT LEVELS. BLANK IF NO INT. REPAIR IS AUTHORIZED BETWEEN O & D LEVEL.
		N	ASSIGNED TO XB SOURCE CODE AND INDICATES ITEM IS PROCURED LOCALLY. NOT STOCKED IN THE SUPPLY SYSTEM.
A	SPECIAL HANDLING REQUIRED. CONTACT ITEM MANAGER FOR DISPOSAL INSTRUCTIONS.	T	ASSIGNED TO TRAINING DEVICES WITH SOURCE CODE OF PD. INDICATES ITEM IS NOT A PROCURABLE SPARE. WSN IS ASSIGNED ONLY TO PERMIT VISIBILITY OF REPAIR PART RELATIONSHIP.

Figure 1. SM&R Code Explanation

ORGANIZATIONAL MAINTENANCE

FAULT ISOLATION MANUAL

TROUBLESHOOTING PROCEDURE

Reference Material

Electrical System	A1-F18AC-420-500
DC Power System	WP004 00
Line Maintenance Access Doors	A1-F18AC-LMM-010
Line Maintenance Procedures	A1-F18AC-LMM-000

Alphabetical Index

Subject	Page No.
Table 1	1

Record of Applicable Technical Directives

None

Table 1. Code 880, No Code 881, and U BATT Caution Remained On

Support Equipment Required

NOTE

Alternate item type designations or part numbers are listed in parentheses.

Part Number or
Type Designation
260-6XLP
(AN/USM-311)

Nomenclature
Multimeter

Table 1. Code 880, No Code 881, and U BATT Caution Remained On (Continued)


<p align="center">Materials Required</p> <p align="center">None</p> <p align="center">NOTE</p> <p>DC Power System Schematic (A1-F18AC-420-500, WP004 00) may be used as an aid when doing this procedure.</p> <p>For component locator, refer to A1-F18AC-420-500, WP004 00.</p> <p>Malfunction is caused by one of the items below:</p> <p>Aircraft Wiring No. 2 Circuit Breaker Panel Assembly Utility Battery and Charger Unit</p>		
Procedure	No	Yes
<p align="center"></p> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale.</p> <p>To prevent damage to aircraft wiring or equipment make sure multimeter leads/jumper wires are installed on correct pins. When electrical power is off, 24vdc battery voltage exists on some pins of connectors listed below:</p> <p>85P-F001A</p> <p align="center">NOTE</p> <p>The question used in logic tree "Does continuity exist" means to test for the items listed below:</p> <ol style="list-style-type: none"> 1. Pin to pin test per procedural step. 2. Shorts to ground. 3. Shorts between surrounding pins on connectors. 4. Shorts between shield and conductors. 5. Shield continuity. <p>a. Do substeps below:</p> <p>(1) Open door 10R (A1-F18AC-LMM-010).</p> <p>(2) On no. 2 circuit breaker panel assembly, is UTIL BAT/CHGR circuit breaker 1CBD074 (zone B16) tripped?</p>		
	g	b

Table 1. Code 880, No Code 881, and U BATT Caution Remained On (Continued)

Procedure	No	Yes
b. Do substeps below:		
(1) Close UTIL BAT/CHGR circuit breaker 1CBD074.		
(2) Disconnect 1P-D035A from utility battery and charger unit (door 10R).		
(3) Apply electrical power (A1-F18AC-LMM-000).		
(4) Does circuit breaker trip?	c	d
c. Replace utility battery and charger unit (A1-F18AC-420-300, WP019 00) and do step i.....	-	-
d. Do the substeps below:		
(1) Remove electrical power (A1-F18AC-LMM-000).		
(2) Disconnect 52P-D024C from no. 2 circuit breaker panel assembly (door 10R).		
(3) Does continuity exist from 52P-D024C pin w to 1P-D035A pin W?	e	f
e. Isolate defective aircraft wiring (A1-F18A()-WDM-000) and do step i.....	-	-
f. Isolate between no. 2 circuit breaker panel assembly wiring and 1CBD074 (A1-F18AC-420-300, WP024 00) and do step i.	-	-
g. Do the substeps below:		
(1) Disconnect 1P-D035A from utility battery and charger unit (door 10R).		
(2) Apply electrical power (A1-F18AC-LMM-000).		
(3) Does 28vdc exist from 1P-D035A pin W and 1P-D035A pin Z (ground)?	d	h
h. Do substeps below:		
(1) Remove electrical power (A1-F18AC-LMM-000).		
(2) Open door 14R (A1-F18AC-LMM-010).		
(3) Disconnect 85P-F001A from Signal Data Recorder RO-508/ASM-612.		
(4) Does continuity exist from 1P-D035A pin U to 85P-F001A pin 26?	e	c

Table 1. Code 880, No Code 881, and U BATT Caution Remained On (Continued)

Procedure	No	Yes
i. If disconnected, removed, or opened during this procedure, make sure the items listed below are connected, installed, or closed:		
(1) Door 10R		
(2) 1P-D035A		
(3) 52P-D024C		
(4) Door 14R		
(5) 85P-F001A.....	-	-

ORGANIZATIONAL MAINTENANCE

FAULT ISOLATION MANUAL

TROUBLESHOOTING PROCEDURE

Reference Material

Electrical System	A1-F18AC-420-500
DC Power System	WP004 00
Line Maintenance Access Doors	A1-F18AC-LMM-010
Line Maintenance Procedures	A1-F18AC-LMM-000

Alphabetical Index

Subject	Page No.
Table 1	1

Record of Applicable Technical Directives

None

Table 1. Code 882, No Code 883, and E BATT Caution Light Remained On

Support Equipment Required


NOTE

Alternate item type designations or part numbers are listed in parentheses.

Part Number or
Type Designation
260-6XLP
(AN/USM-311)

Nomenclature
Multimeter

**Table 1. Code 882, No Code 883, and E BATT Caution Light Remained On
(Continued)**

<p align="center">Materials Required</p> <p align="center">None</p> <p align="center">NOTE</p> <p>DC Power System Schematic (A1-F18AC-420-500, WP004 00) may be used as an aid when doing this procedure.</p> <p>For component locator, refer to A1-F18AC-420-500, WP004 00.</p> <p>Malfunction is caused by one of the items below:</p> <p>Aircraft Wiring Emergency Battery and Charger Unit No. 8 Circuit Breaker/Relay Panel Assembly</p>		
Procedure	No	Yes
<div align="center">  </div> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale.</p> <p>To prevent damage to aircraft wiring or equipment make sure multimeter leads/jumper wires are installed on correct pins. When electrical power is off, 24vdc battery voltage exists on some pins of connectors listed below:</p> <p>52P-C159E 85P-F001A</p> <p align="center">NOTE</p> <p>The question used in logic tree "Does continuity exist" means to test for the items listed below:</p> <ol style="list-style-type: none"> 1. Pin to pin test per procedural step. 2. Shorts to ground. 3. Shorts between surrounding pins on connectors. 4. Shorts between shield and conductors. 5. Shield continuity. <p>a. Do substeps below:</p> <p>(1) Open door 10L (A1-F18AC-LMM-010).</p>		

**Table 1. Code 882, No Code 883, and E BATT Caution Light Remained On
(Continued)**

Procedure	No	Yes
(2) On no. 8 circuit breaker/relay panel assembly, is EMER BATT CHG circuit breaker 1CBC073 (zone B10) tripped?.....	g	b
b. Do substeps below:		
(1) Close EMER BATT CHG circuit breaker 1CBC073.		
(2) Disconnect 1P-C072A from emergency battery and charger unit (door 10L).		
(3) Apply electrical power (A1-F18AC-LMM-000).		
(4) Does circuit breaker trip?.....	c	d
c. Replace emergency battery and charger unit (A1-F18AC-420-300, WP020 00) and do step i.....	-	-
d. Do substeps below:		
(1) Remove electrical power (A1-F18AC-LMM-000).		
(2) Disconnect 52P-C159E from no. 8 circuit breaker/relay panel assembly.		
(3) Does continuity exist from 52P-C159E pin u to 1P-C072A pin W?	e	f
e. Isolate defective aircraft wiring (A1-F18A()-WDM-000) and do step i.....	-	-
f. Isolate between no. 8 circuit breaker/relay panel assembly wiring and 1CBD073 (A1-F18AC-420-300, WP030 00) and do step i.....	-	-
g. Do substeps below:		
(1) Disconnect 1P-C072A from emergency battery and charger unit (door 10L).		
(2) Apply electrical power (A1-F18AC-LMM-000).		
(3) Does 28vdc exist from 1P-C072A pin W to 1P-C072A pin S?	d	h
h. Do substeps below:		
(1) Remove electrical power (A1-F18AC-LMM-000).		
(2) Open door 14R (A1-F18AC-LMM-010).		
(3) Disconnect 85P-F001A from Signal Data Recorder RO-508/ASM-612.		
(4) Does continuity exist from 85P-F001A pin 28 to 1P-C072A pin U?.....	e	c

**Table 1. Code 882, No Code 883, and E BATT Caution Light Remained On
(Continued)**

Procedure	No	Yes
i. If disconnected, removed, or opened during this procedure, make sure the items listed below are connected, installed, or closed:		
(1) Door 10L		
(2) 1P-C072A		
(3) 52P-C159E		
(4) Door 14R		
(5) 85P-F001A.....	-	-

ORGANIZATIONAL MAINTENANCE

FAULT ISOLATION MANUAL

TROUBLESHOOTING PROCEDURE

Reference Material

Line Maintenance Procedures	A1-F18AC-LMM-000
Line Maintenance Access Doors.....	A1-F18AC-LMM-010
Electrical System	A1-F18AC-420-500
Power Distribution System	WP005 00

Alphabetical Index

Subject	Page No.
Table 1.....	1

Record of Applicable Technical Directives

None

Table 1. Code 884

Support Equipment Required

NOTE

Alternate item type designations or part numbers are listed in parentheses.

Part Number or
Type Designation
260-6XLP
(AN/USM-311)

Nomenclature
Multimeter

Table 1. Code 884 (Continued)


Materials Required None											
NOTE Ground Power Switching Schematic (A1-F18AC-420-500, WP005 00) may be used as an aid when doing this procedure. For component locator, refer to A1-F18AC-420-500, WP005 00. Malfunction is caused by secondary power system or one of the items listed below: Aircraft Wiring External Power Contactor Left Power Contactor No. 7 Circuit Breaker/Relay Panel Assembly Right Power Contactor											
Procedure	No	Yes									
<div style="text-align: center; margin-bottom: 20px;">  </div> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale.</p> <p>To prevent damage to aircraft wiring or equipment, make sure multimeter leads/jumper wires are installed on correct pins. When electrical power is off, 24vdc battery voltage exists on some pins of connectors listed below:</p> <p style="margin-left: 40px;">52P-C057E</p> <p style="text-align: center; margin-top: 20px;">NOTE</p> <p>The question used in logic tree "Does continuity exist" means to test for the items listed below:</p> <ol style="list-style-type: none"> 1. Pin to pin test per procedural step. 2. Shorts to ground. 3. Shorts between surrounding pins on connectors. 4. Shorts between shield and conductors. 5. Shield continuity. <table style="width: 100%; border-collapse: collapse; margin-top: 20px;"> <tr> <td style="width: 80%; border-right: 1px solid black; padding: 5px;">a. Did failure occur in ground maintenance mode?</td> <td style="width: 5%; text-align: center; border-right: 1px solid black; padding: 5px;">p</td> <td style="width: 15%; padding: 5px;">b</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">b. Did ENG CRANK switch remain engaged?</td> <td style="text-align: center; border-right: 1px solid black; padding: 5px;">c</td> <td style="padding: 5px;">d</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">c. Do secondary power control system test (A1-F18AC-240-200, WP003 00)</td> <td style="text-align: center; border-right: 1px solid black; padding: 5px;">-</td> <td style="padding: 5px;">-</td> </tr> </table>			a. Did failure occur in ground maintenance mode?	p	b	b. Did ENG CRANK switch remain engaged?	c	d	c. Do secondary power control system test (A1-F18AC-240-200, WP003 00)	-	-
a. Did failure occur in ground maintenance mode?	p	b									
b. Did ENG CRANK switch remain engaged?	c	d									
c. Do secondary power control system test (A1-F18AC-240-200, WP003 00)	-	-									

Table 1. Code 884 (Continued)

Procedure	No	Yes
d. Do substeps below:		
(1) Remove electrical power (A1-F18AC-LMM-000).		
(2) Open door 10L (A1-F18AC-LMM-010).		
(3) Disconnect 52P-C057D and 52P-C057E from no. 7 circuit breaker/relay panel assembly.		
(4) Start APU and operate in ground maintenance mode (A1-F18AC-LMM-000).		
(5) Does 28vdc exist from 52P-C057E pin 31 to aircraft ground?	g	e
e. Does 28vdc exist from 52P-C057E pin 32 to aircraft ground?	j	f
f. Do substeps below:		
(1) Turn off electrical power (A1-F18AC-LMM-000).		
(2) Does continuity exist from 52P-C057E pin 44 to 52P-C057D pin 49?	h	u
g. Do substeps below:		
(1) Turn off electrical power (A1-F18AC-LMM-000).		
(2) Disconnect 52P-C057C from no. 7 circuit breaker/relay panel assembly.		
(3) Does continuity exist from 52P-C057C pin L to 52P-C057E pin 31?	i	v
h. Do substeps below:		
(1) Disconnect 1P-C022 from external power contactor (door 10L).		
(2) Does continuity exist from:		
52P-C057E pin 44 to 1P-C022 pin 11		
52P-C057D pin 49 to 1P-C022 pin 12?	t	y
i. Do substeps below:		
(1) Disconnect 1P-C022 from external power contactor (door 10L).		
(2) Does continuity exist from:		
52P-C057C pin L to 1P-C022 pin 8		
52P-C057E pin 31 to 1P-C022 pin 9?	t	y
j. Do substeps below:		
(1) Turn off electrical power (A1-F18AC-LMM-000).		

Table 1. Code 884 (Continued)

Procedure	No	Yes
(2) Disconnect 52P-C057C from no. 7 circuit breaker/relay panel assembly.		
(3) Does continuity exist from 52P-C057C pin K to 52P-C057E pin 32?	k	ah
k. Do substeps below:		
(1) Disconnect 1P-C007 from left power contactor (door 10L).		
(2) Does continuity exist from 1P-C007 pin 14 to 52P-C057E pin 32?	t	l
l. Does continuity exist from 1P-C007 pin 15 to 52P-C057C pin K?	m	ad
m. Do substeps below:		
(1) Open door 10R (A1-F18AC-LMM-010).		
(2) Disconnect 1P-D008 from right power contactor.		
(3) Does continuity exist from 1P-D008 pin 14 to 1P-C007 pin 15?	t	n
n. Does continuity exist from 52P-C057C pin K to 1P-D008 pin 15?	o	af
o. Do substeps below:		
(1) Disconnect 1P-C022 from external power contactor (door 10L).		
(2) Does continuity exist from:		
1P-C022 pin 15 to 1P-D008 pin 15		
1P-C022 pin 14 to 52P-C057C pin K?	t	y
p. Can external electrical power be applied to aircraft?	q	r
q. On 161353 THRU 161987 BEFORE F18 AFC 48, do table 8 (A1-F18AC-420-200, WP003 02). On 162394 AND UP, ALSO 161353 THRU 161987 AFTER F18 AFC 48, do table 4 (A1-F18AC-420-200, WP003 05)	-	-
r. Do substeps below:		
(1) Turn off electrical power (A1-F18AC-LMM-000).		
(2) Open door 10L (A1-F18AC-LMM-010).		
(3) Disconnect 52P-C057D and 52P-C057E from no. 7 circuit breaker/relay panel assembly.		
(4) Turn on electrical power (A1-F18AC-LMM-000).		

Table 1. Code 884 (Continued)

Procedure	No	Yes
(5) Does 28vdc exist from: 52P-C057E pin 31 to aircraft ground 52P-C057E pin 32 to aircraft ground?	w	s
s. Do substeps below: (1) Turn off electrical power (A1-F18AC-LMM-000). (2) Disconnect 1P-C022 from external power contactor (door 10L). (3) Does continuity exist from: 1P-C022 pin 12 to 52P-C057D pin 49 1P-C022 pin 13 to aircraft ground?	t	u
t. Isolate defective aircraft wiring (A1-F18A()-WDM-000) and do step ai	-	-
u. Do substeps below: (1) On F/A-18A AND F/A-18B, open door 32R (A1-F18AC-LMM-010). (2) On F/A-18A AND F/A-18B, disconnect 85P-N002A from Signal Data Converter CV-3493/ASM-612. (3) On F/A-18A AND F/A-18B, disconnect 52P-C057F from no. 7 circuit breaker/relay panel assembly. (4) On F/A-18A AND F/A-1B, does continuity exist from 52P-C057F pin 78 to 85P-N002A pin 51?	t	ag
(5) On F/A-18C AND F/A-18D, open door 14R (A1-F18AC-LMM-010) (6) On F/A-18C AND F/A-18D, disconnect 85P-F042D from Signal Data Computer CP1726/ASQ-194. (7) On F/A-18C AND F/A-18D, disconnect 52P-C057F from no. 7 circuit breaker/relay panel assembly. (8) On F/A-18C AND F/A-18D, does continuity exist from 52P-C057F pin 78 to 85P-F042D pin 70?	t	ag
v. Isolate between no. 7 circuit breaker/relay panel assembly wiring and 1CBC048 (A1-F18AC-420-300, WP027 00) and do step ai	-	-
w. Do substeps below: (1) Turn off electrical power (A1-F18AC-LMM-000). (2) Disconnect 1P-C022 from external power contactor.		

Table 1. Code 884 (Continued)

Procedure	No	Yes
(3) Does continuity exist from: 1P-C022 pin 9 to 52P-C057E pin 31 1P-C022 pin 10 to 52P-C057E pin 32?	t	x
x. Do substeps below: (1) Turn on electrical power (A1-F18AC-LMM-000). (2) Does 28vdc exist from 1P-C022 pin 16 to 1P-C022 pin 13?	z	aa
y. Replace external power contactor (A1-F18AC-420-300, WP012 00) and do step ai	-	-
z. Do substeps below: (1) Turn off electrical power (A1-F18AC-LMM-000). (2) Disconnect 52P-C057C from no. 7 circuit breaker/relay panel assembly. (3) Does continuity exist from 52P-C057C pin L to 1P-C022 pin 16?	t	v
aa. Do substeps below: (1) Turn off electrical power (A1-F18AC-LMM-000). (2) Does continuity exist from 1P-C022 pin 10 to 1P-C022 pin 15?	ab	y
ab. Do substeps below: (1) Disconnect 1P-C007 from left power contactor (door 10L). (2) Does continuity exist from 1P-C007 pin 14 to 1P-C022 pin 10?	t	ac
ac. Does continuity exist from 1P-C007 pin 15 to 1P-C022 pin 15?	ae	ad
ad. Replace left power contactor (A1-F18AC-420-300, WP005 00) and do step ai	-	-
ae. Do substeps below: (1) Open door 10R (A1-F18AC-LMM-010). (2) Disconnect 1P-D008 from right power contactor. (3) Does continuity exist from: 1P-D008 pin 14 to 1P-C007 pin 15 1P-D008 pin 15 to 1P-C022 pin 15?	t	af

Table 1. Code 884 (Continued)

Procedure	No	Yes
af. Replace right power contactor (A1-F18AC-420-300, WP006 00) and do step ai	-	-
ag. Malfunction has been isolated to one of the below:		
(1) No. 7 circuit breaker/relay panel assembly wiring and relays 1K-C099, 2K-C016, 3K-C019, 3K-C020, 1K-C100, or 1K-C101 (A1-F18AC-420-300, WP027 00).		
(2) External power contactor (A1-F18AC-420-300, WP012 00).		
(3) Do step ai.	-	-
ah. Isolate between no. 7 circuit breaker/relay panel assembly wiring, 1CBC048, and relay 1K-C099 (A1-F18AC-420-300, WP027 00) and do step ai.	-	-
ai. If disconnected, removed, or opened during this procedure, make sure the items listed below are connected, installed, or closed:		
(1) Door 10L		
(2) Door 14R		
(3) 52P-C057D		
(4) 52P-C057E		
(5) 52P-C057C		
(6) 52P-C057F		
(7) 1P-C022		
(8) 1P-C007		
(9) Door 10R		
(10) 1P-D008		
(11) Door 32R		
(12) 85P-N002A		
(13) 85P-F042D.....	-	-

ORGANIZATIONAL MAINTENANCE

FAULT ISOLATION MANUAL

TROUBLESHOOTING PROCEDURE

Reference Material

Line Maintenance Access Doors.....	A1-F18AC-LMM-010
Data Link, Instrument Landing, and Radar Beacon Systems.....	A1-F18AC-630-500
Instrument Landing System Locator.....	WP003 00
Data Link, Instrument Landing, and Radar Beacon Systems.....	A1-F18AE-630-500
Instrument Landing System Locator.....	WP003 00

Alphabetical Index

Subject	Page No.
Table 1.....	1

Record of Applicable Technical Directives

None

Table 1. Code 148

Support Equipment Required
None
Materials Required
None

Table 1. Code 148 (Continued)

NOTE		
For component locator, refer to A1-F18AC-630-500, WP003 00 or A1-F18AE-630-500, WP003 00.		
Malfunction is caused by one of the items below:		
Pulse Decoder KY-651()/ARA-63		
Radio Receiver R-1379()/ARA-63		
Procedure	No	Yes
a. Open door 3 (A1-F18AC-LMM-010). Does Radio Receiver R-1379()/ARA-63 fault indicator indicate failed (white)?	c	b
b. Do substeps below:		
(1) Replace Radio Receiver R-1379()/ARA-63 (A1-F18AC-630-300, WP003 00 or A1-F18AE-630-300, WP003 00).		
(2) Open door 13R (A1-F18AC-LMM-010).		
(3) Reset fault indicator on Pulse Decoder KY-651()/ARA-63 by turning fault indicator clockwise until indicator is black and white.		
(4) Do step d	-	-
c. Replace Pulse Decoder KY-651()/ARA-63 (A1-F18AC-630-300, WP004 00 or A1-F18AE-630-300, WP004 00) and do step d.....	-	-
d. If disconnected, removed, or opened during this procedure, make sure the items listed below are connected, installed, or closed:		
(1) Door 3		
(2) Door 13R.....	-	-

ORGANIZATIONAL MAINTENANCE

FAULT ISOLATION MANUAL

TROUBLESHOOTING PROCEDURE

This WP supersedes WP012 00, dated 15 December 1987

Reference Material

Electrical System	A1-F18AC-420-500
Power Distribution System	WP005 00
Line Maintenance Procedures	A1-F18AC-LMM-000
Line Maintenance Access Doors	A1-F18AC-LMM-010

Alphabetical Index

Subject	Page No.
Table 1	1

Record of Applicable Technical Directives

None

Table 1. GND PWR Switch Does Not Engage

Support Equipment Required	
NOTE	
Alternate item type designations or part numbers are listed in parentheses.	
Part Number or Type Designation	Nomenclature
77AN (260-6XLP)	Multimeter
Materials Required	
None	

Table 1. GND PWR Switch Does Not Engage (Continued)


<p style="text-align: center;">NOTE</p> <p>Ground Power Switching Schematic (A1-F18AC-420-500, WP005 00) may be used as an aid when doing this procedure.</p> <p>For component locator, refer to A1-F18AC-420-500, WP005 00.</p> <p>Malfunction is caused by one of the items below:</p> <p>Aircraft Wiring Avionics Cooling System External Power Contactor GND PWR Control Panel Assembly Left Power Contactor No. 4 Relay Panel Assembly No. 7 Circuit Breaker/Relay Panel Assembly Right Power Contactor</p>		
Procedure	No	Yes
<p style="text-align: center;"></p> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale.</p> <p>To prevent damage to aircraft wiring or equipment make sure multimeter leads/jumper wires are installed on correct pins. When electrical power is off, 24vdc battery voltage exists on some pins of connectors listed below:</p> <p>52P-N118A 52P-C057E</p> <p style="text-align: center;">NOTE</p> <p>The question used in logic tree "Does continuity exist" means to test for the items listed below:</p> <ol style="list-style-type: none"> 1. Pin to pin test per procedural step. 2. Shorts to ground. 3. Shorts between surrounding pins on connectors. 4. Shorts between shield and conductors. 5. Shield continuity. 		
a. Will any GND PWR switch remain on?.....	c	b
b. If installed, remove jumper wire between pins 36 and 37 on 1P-H004 and wire between 1P-H004 and aircraft ground. Repair GND PWR control panel assembly (A1-F18AC-420-300, WP023 00)	-	-

Table 1. GND PWR Switch Does Not Engage (Continued)

Procedure	No	Yes
c. Read and record maintenance codes (A1-F18AC-LMM-000). Does code 884 exist?	e	d
d. Do troubleshooting procedure (WP006 00).....	-	-
e. Do substeps below:		
(1) Turn off electrical power (A1-F18AC-LMM-000).		
(2) Remove GND PWR control panel assembly (A1-F18AC-420-300, WP023 00).		
(3) If external power is to be used in the next step, add jumper wire between pins 36 and 37 on 1P-H004 and add wire between 1P-H004 pin 34 and aircraft ground.		
(4) Turn on electrical power (A1-F18AC-LMM-000).		
(5) Does 28vdc exist from 1P-H004 pin 26 to pin 31 (ground)?	f	b
f. Does 28vdc exist from 1P-H004 pin 26 to pin 14 (ground)?	j	g
g. Do substeps below:		
(1) Turn off electrical power (A1-F18AC-LMM-000).		
(2) Open door 10L (A1-F18AC-LMM-010).		
(3) Disconnect 52P-C057E from no. 7 circuit breaker/relay panel assembly.		
(4) Does continuity exist from 52P-C057E pin 125 to 1P-H004 pin 31?	h	i
h. Isolate defective aircraft wiring (A1-F18A()-WDM-000) and do step af	-	-
i. Do substeps below:		
(1) Do step af.		
(2) Do air conditioning system test (A1-F18AC-410-200, WP003 00).....	-	-
j. Do substeps below:		
(1) Turn off electrical power (A1-F18AC-LMM-000).		
(2) If installed, remove jumper wire between pins 36 and 37 on 1P-H004 and wire between 1P-H004 and aircraft ground.		
(3) Connect 1P-H004.		
(4) Is external power being used?	m	k

Table 1. GND PWR Switch Does Not Engage (Continued)

Procedure	No	Yes
k. Do substeps below:		
(1) Remove external power (A1-F18AC-LMM-000).		
(2) Operate APU in ground maintenance mode (A1-F18AC-LMM-000).		
(3) Engage GND PWR switch with ENG CRANK switch in both L and R (A1-F18AC-LMM-000).		
(4) Does GND PWR switch engage (either position)?	o	l
l. Do substeps below:		
(1) If GND PWR switch engages with ENG CRANK switch in both L and R, go to step t.		
(2) If GND PWR switch engages with ENG CRANK switch in R but not L, go to step u.		
(3) If GND PWR switch engages with ENG CRANK switch in L but not R, go to step w.	-	-
m. Do substeps below:		
(1) If ENG CRANK switch in L, operate APU in ground maintenance mode with ENG CRANK switch in R, and engage GND PWR switch (A1-F18AC-LMM-000).		
(2) If ENG CRANK switch in R, operate APU in ground maintenance mode with ENG CRANK switch in L, and engage GND PWR switch (A1-F18AC-LMM-000).		
(3) Shut down APU (A1-F18AC-LMM-000).		
(4) Apply external electrical power (A1-F18AC-LMM-000) and engage GND PWR switch.		
(5) Does GND PWR switch engage (either source)?	o	n
n. Do substeps below:		
(1) If GND PWR switch engages only on external power, go to step y.		
(2) If GND PWR switch engages only with ENG CRANK switch in L, go to step w.		
(3) If GND PWR switch engages only with ENG CRANK switch in R, go to step u.		
(4) If GND PWR switch engages with ENG CRANK switch in L and external power, go to step ab.		
(5) If GND PWR switch engages with ENG CRANK switch in R and external power, go to step ad.....	-	-

Table 1. GND PWR Switch Does Not Engage (Continued)

Procedure	No	Yes
o. Do substeps below:		
(1) Turn off electrical power (A1-F18AC-LMM-000).		
(2) Open door 32R (A1-F18AC-LMM-010).		
(3) Disconnect 1P-H004 from GND PWR control panel assembly.		
(4) Disconnect 52P-N118A from no. 4 relay panel assembly (door 32R).		
(5) Does continuity exist from 1P-H004 pin 26 to 52P-N118A pin 25?	h	p
p. Do substeps below:		
(1) Open door 10R (A1-F18AC-LMM-010).		
(2) Disconnect 1P-D008 from right power contactor.		
(3) Open door 10L (A1-F18AC-LMM-010).		
(4) Disconnect 1P-C022 from external power contactor.		
(5) Disconnect 52P-C057C from no. 7 circuit breaker/relay panel assembly.		
(6) Does continuity exist from:		
1P-D008 pin 15 to 1P-C022 pin 15		
52P-C057C pin K to 1P-C022 pin 14?	h	q
q. Does continuity exist from 1K-C022 external power contactor pin 14 to pin 15?	r	s
r. Replace external power contactor 1K-C022 (A1-F18AC-420-300, WP012 00), and do step af.	-	-
s. Isolate between no. 7 circuit breaker/relay panel assembly wiring, relay 1K-C099, relay 2K-C016, and 1CBC048 (A1-F18AC-420-300, WP027 00) and do step af.	-	-
t. Do substeps below:		
(1) Turn off electrical power (A1-F18AC-LMM-000).		
(2) Open door 10L (A1-F18AC-LMM-010).		
(3) Disconnect 1P-C022 from external power contactor (door 10L).		
(4) Disconnect 52P-C057C from no. 7 circuit breaker/relay panel assembly (door 10L).		
(5) Does continuity exist from 1P-C022 pin 16 to 52P-C057C pin L?	h	r

Table 1. GND PWR Switch Does Not Engage (Continued)

Procedure	No	Yes
<p>u. Do substeps below:</p> <p>(1) Turn off electrical power (A1-F18AC-LMM-000).</p> <p>(2) Open door 10R (A1-F18AC-LMM-010).</p> <p>(3) Open door 10L (A1-F18AC-LMM-010).</p> <p>(4) Disconnect 1P-C007 from left power contactor (door 10L).</p> <p>(5) Disconnect 1P-C022 from external power contactor (door 10L).</p> <p>(6) Disconnect 1P-D008 from right power contactor (door 10R).</p> <p>(7) Does continuity exist from:</p> <p>1P-C007 pin 15 to 1P-D008 pin 14</p> <p>1P-D008 pin 15 to 1P-C022 pin 15?</p>	h	v
v. Replace right power contactor, 1K-D008 (A1-F18AC-420-300, WP006 00) and do step af.....	-	-
<p>w. Do substeps below:</p> <p>(1) Turn off electrical power (A1-F18AC-LMM-000).</p> <p>(2) Open door 10L (A1-F18AC-LMM-010).</p> <p>(3) Open door 10R (A1-F18AC-LMM-010).</p> <p>(4) Disconnect 1P-H004 from GND PWR control panel assembly.</p> <p>(5) Disconnect 1P-C007 from left power contactor (door 10L).</p> <p>(6) Disconnect 1P-D008 from right power contactor (door 10R).</p> <p>(7) Does continuity exist from:</p> <p>1P-H004 pin 26 to 1P-C007 pin 14</p> <p>1P-C007 pin 15 to 1P-D008 pin 14?</p>	h	x
x. Replace left power contactor, 1K-C007 (A1-F18AC-420-300, WP005 00) and do step af.....	-	-
<p>y. Do substeps below:</p> <p>(1) Turn off electrical power (A1-F18AC-LMM-000).</p> <p>(2) Open door 32R (A1-F18AC-LMM-010).</p> <p>(3) Open door 10L (A1-F18AC-LMM-010).</p>		

Table 1. GND PWR Switch Does Not Engage (Continued)

Procedure	No	Yes
(4) Disconnect 52P-N118A from no. 4 relay panel assembly (door 32R).		
(5) Disconnect 1P-C007 from left power contactor (door 10L).		
(6) Does continuity exist from 52P-N118A pin 35 to 1P-C007 pin 15?	h	z
z. Do substeps below:		
(1) Disconnect 1P-C022 from external power contactor.		
(2) Disconnect 52P-C057C from no 7 circuit breaker/relay panel assembly.		
(3) Does continuity exist from 1P-C022 pin 14 to 52P-C057 pin K?	h	aa
aa. Does continuity exist from 1J-C022 pin 15 to 1J-C022 pin 14?	r	s
ab. Do substeps below:		
(1) Turn off electrical power (A1-F18AC-LMM-000).		
(2) Open door 32R (A1-F18AC-LMM-010).		
(3) Open door 10R (A1-F18AC-LMM-010).		
(4) Disconnect 52P-N118A from no. 4 relay panel assembly (door 32R).		
(5) Disconnect 1P-D008 from right power contactor (door 10R).		
(6) Does continuity exist from 52P-N118A pin 44 to 1P-D008 pin 15?	h	ac
ac. Isolate between no. 4 relay panel assembly wiring and relay 3K-N014 (A1-F18AC-420-300, WP037 00) and do step af.	-	-
ad. Do substeps below:		
(1) Turn off electrical power (A1-F18AC-LMM-000).		
(2) Open door 32R (A1-F18AC-LMM-010).		
(3) Disconnect 1P-H004 from GND PWR control panel assembly.		
(4) Disconnect 52P-N118A from no. 4 relay panel assembly (door 32R).		
(5) Does continuity exist from 1P-H004 pin 26 to 52P-N118A pin 25?	h	ae
ae. Isolate between no. 4 relay panel assembly wiring and relay 3K-N013 (A1-F18AC-420-300, WP037 00) and do step af.	-	-

Table 1. GND PWR Switch Does Not Engage (Continued)

Procedure	No	Yes
af. If disconnected, removed, or opened during this procedure, make sure the items listed below are connected, installed, or closed:		
(1) Jumper wire between 1P-H004 pins 36 and 37		
(2) Jumper wire between 1P-H004 pin 34 and aircraft ground		
(3) GND PWR control panel assembly		
(4) Door 10L		
(5) Door 10R		
(6) Door 32R		
(7) 52P-C057C		
(8) 1P-C022		
(9) 1P-D008		
(10) 1P-C007		
(11) 52P-N118A		
(12) 1P-H004		
(13) 52P-C057E.....	-	-

ORGANIZATIONAL MAINTENANCE

FAULT ISOLATION MANUAL

TROUBLESHOOTING PROCEDURE

Reference Material

Line Maintenance Procedures	A1-F18AC-LMM-000
Line Maintenance Access Doors.....	A1-F18AC-LMM-010
Environmental Control Systems.....	A1-F18AC-410-500
Radar Liquid Cooling System.....	WP014 00
Radar System	A1-F18AC-742-300
Extension and Stowage of Radar Set AN/APG-65	WP003 00

Alphabetical Index

Subject	Page No.
Table 1.....	2

Record of Applicable Technical Directives

None

Table 1. Code 841

Support Equipment Required

NOTE

Alternate item type designations or part numbers are listed in parentheses.

Part Number or Type Designation	Nomenclature
260-6XLP (AN/USM-311)	Multimeter
74D110019-1001	Nonmetallic Hose Assembly - Radar Jumper
74D110161-1001	Gage Assy, Pressure - RDR LIQ CLG SYS (pressure gage)

Materials Required

None

NOTE

Radar Liquid Cooling System Schematic (A1-F18AC-410-500, WP014 00) may be used as an aid when doing this procedure.

For component locator, refer to A1-F18AC-410-500, WP014 00.

Malfunction is caused by one of the items below:

Aircraft Wiring
No. 7 Circuit Breaker/Relay Panel Assembly
No. 8 Circuit Breaker/Relay Panel Assembly
Radar Liquid Cooling Centrifugal Pump Unit
Radar Liquid Low Pressure Sensor
RDR LCS SVCE Panel Assembly
SNSR Pod Control Box Panel Assembly

Table 1. Code 841 (Continued)


Procedure	No	Yes
<div style="text-align: center;">  <p>CAUTION</p> </div> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use RX1 scale.</p> <p>To prevent damage to aircraft wiring or equipment make sure multimeter leads/jumper wires are installed on correct pins. When electrical power is off, 24vdc battery voltage exists on some pins of connectors listed below:</p> <p>52P-C159G 52P-C057E</p> <p style="text-align: center;">NOTE</p> <p>The question used in logic tree "Does continuity exist" means to test for the items listed below:</p> <ol style="list-style-type: none"> 1. Pin to pin test per procedural step. 2. Shorts to ground. 3. Shorts between surrounding pins on connectors. 4. Shorts between shield and conductors. 5. Shield continuity. <p>a. Do substeps below:</p> <ol style="list-style-type: none"> (1) If Radar Transmitter T-1377/APG-65 is not installed, extend Radar Set AN/APG-65 (A1-F18AC-742-300, WP003 00) and connect radar jumper nonmetallic hose assembly to radar quick disconnect fittings. (2) Open door 6 (A1-F18AC-LMM-010). (3) Apply external electrical power (A1-F18AC-LMM-000). (4) On RDR LCS SVCE panel assembly, set PUMP switch to ON. (5) Does radar liquid cooling centrifugal pump unit (pump) operate?..... <p>b. Do substeps below:</p> <ol style="list-style-type: none"> (1) On RDR LCS SVCE panel assembly, set PUMP switch to OFF. (2) Turn off external electrical power (A1-F18AC-LMM-000). (3) Open door 10L (A1-F18AC-LMM-010). 		
	b	k

Table 1. Code 841 (Continued)

Procedure	No	Yes
(4) Disconnect 52P-C057C and 52P-C057F from no. 7 circuit breaker/relay panel assembly.		
(5) Disconnect 22P-A090 from RDR LCS SVCE panel assembly.		
(6) Open door 22 (A1-F18AC-LMM-010).		
(7) Disconnect 22P-M086 from pump.		
(8) Does continuity exist from:		
22P-A090 pin 22 to ground		
52P-C057C pin J to 22P-M086 pin R		
52P-C057C pin H to 22P-M086 pin M		
52P-C057C pin G to 22P-M086 pin N		
22P-M086 pin A to ground		
22P-M086 pin H to 22P-A090 pin 19		
22P-M086 pin G to 52P-C057F pin 17?.....	c	d
c. Isolate defective aircraft wiring (A1-F18A()-WDM-000) and do step z	-	-
d. Does continuity exist from 22B-M086 pump receptacle pin G to pin H?	p	e
e. Do substeps below:		
(1) On RDR LCS SVCE panel assembly, set and hold PUMP switch to ON.		
(2) Does continuity exist from 22J-A090 pin 19 to pin 22?.....	f	g
f. Replace RDR LCS SVCE panel assembly (A1-F18AC-410-300, WP125 00) and do step z.....	-	-
g. Do substeps below:		
(1) Connect 22P-M086 to pump.		
(2) Connect 52P-C057C and 52P-C057F to no. 7 circuit breaker/relay panel assembly.		
(3) Turn on external electrical power (A1-F18AC-LMM-000).		
(4) On GND PWR control panel assembly, set and hold 2 switch to B ON for 3 seconds.		
(5) On SNSR pod control box panel assembly, set RADAR switch to STBY.		
(6) Does 28vdc exist at 22P-A090 pin 21?	h	p

Table 1. Code 841 (Continued)

Procedure	No	Yes
h. Does 28vdc exist at 22P-A090 pin 13?.....	j	i
i. Isolate between no. 7 circuit breaker/relay panel assembly wiring and relay 22K-C085 (A1-F18AC-420-300, WP027 00) and do step z.....	-	-
j. Isolate between no. 7 circuit breaker/relay panel assembly wiring and circuit breaker 22CBC106 (A1-F18AC-420-300, WP027 00) and do step z.....	-	-
k. Do substeps below:		
(1) On RDR LCS SVCE panel assembly, set PUMP switch to OFF.		
(2) On GND PWR control panel assembly (left console), set and hold 2 switch to A ON for 3 seconds (A1-F18AC-LMM-000).		
(3) On SNSR pod control box panel assembly (right console), set RADAR switch to STBY.		
(4) Does pump operate?	l	n
l. Do substeps below:		
(1) On SNSR pod control box panel assembly, set RADAR switch to OPR.		
(2) Does pump operate?	s	m
m. Replace SNSR pod control box panel assembly (A1-F18AC-742-300, WP017 00) and do step z.....	-	-
n. Do substeps below:		
(1) On SNSR pod control box panel assembly, set RADAR switch to OPR.		
(2) Does pump operate?	m	o
o. Do substeps below:		
(1) On SNSR pod control box panel assembly, set RADAR switch to OFF.		
(2) On GND PWR control panel assembly, set 2 switch to AUTO.		
(3) Connect pressure gage to radar liquid coolant service coupling (fill).		
(4) On RDR LCS SVCE panel assembly, set PUMP switch to ON.		
(5) After pump has operated for at least 2 minutes, is coolant pressure above 85 psig?.....	p	q
p. Replace radar liquid cooling centrifugal pump unit (A1-F18AC-410-300, WP119 00) and do step z.....	-	-

Table 1. Code 841 (Continued)

Procedure	No	Yes
<p>q. Do substeps below:</p> <p>(1) On RDR LCS SVCE panel assembly, set PUMP switch to OFF.</p> <p>(2) Disconnect pressure gage from radar liquid coolant service coupling (fill).</p> <p>(3) Turn off external electrical power (A1-F18AC-LMM-000).</p> <p>(4) Disconnect 22P-A087 from radar liquid cooling low pressure sensor (door 6).</p> <p>(5) On F/A-18A AND F/A-18B, open door 32R (A1-F18AC-LMM-010).</p> <p>(6) On F/A-18A AND F/A-18B, disconnect 85P-N002A from Signal Data Converter CV-3493/ASM-612.</p> <p>(7) On F/A-18A AND F/A-18B, does continuity exist from:</p> <p style="padding-left: 40px;">85P-N002A pin 18 to 22P-A087 pin 1 22P-A087 pin 2 to aircraft ground?.....</p> <p>(8) On F/A-18C AND F/A-18D, open door 14R (A1-F18AC-LMM-010).</p> <p>(9) On F/A-18C AND F/A-18D, disconnect 85P-F042D from Signal Data Computer CP-1726/ASQ-194.</p> <p>(10) On F/A-18C AND F/A-18D, does continuity exist from:</p> <p style="padding-left: 40px;">85P-F042D pin 84 to 22P-A087 pin 1 22P-A087 pin 2 to aircraft ground?.....</p>	<p>c</p> <p>c</p>	<p>r</p> <p>r</p>
r. Replace radar liquid low pressure sensor (A1-F18AC-410-300, WP123 00) and do step z.....	-	-
<p>s. Do substeps below:</p> <p>(1) On SNSR pod control box panel assembly, set RADAR switch to OFF.</p> <p>(2) Turn off external electrical power (A1-F18AC-LMM-000).</p> <p>(3) Disconnect 22P-A090 from RDR LCS SVCE panel assembly.</p> <p>(4) Open door 10L (A1-F18AC-LMM-010).</p> <p>(5) Disconnect 52P-C057D and 52P-C057E from no. 7 circuit breaker/relay panel assembly.</p> <p>(6) Disconnect 52P-C159G from no. 8 circuit breaker/relay panel assembly.</p>		

Table 1. Code 841 (Continued)

Procedure	No	Yes
(7) On SNSR pod control box panel assembly, set RADAR switch to STBY.		
(8) Does continuity exist from:		
52P-C159G pin 41 to 52P-C057E pin 89		
52P-C057E pin 78 to 52P-C057E pin 7		
52P-C057D pin 47 to 22P-A090 pin 19?	t	u
t. Do substeps below:		
(1) Remove SNSR pod control box panel assembly (A1-F18AC-742-300, WP016 00).		
(2) Does continuity exist from 52J-J080 pin 20 to pin 32?	m	c
u. Does continuity exist from 52J-C057E pin 78 to 89?	v	w
v. Isolate between no. 7 circuit breaker/relay panel assembly wiring and relay 1K-C055 (A1-F18AC-420-300, WP027 00) and do step z.	-	-
w. Do substeps below:		
(1) Connect 52P-C057D and 52P-C057E to no. 7 circuit breaker/relay panel assembly.		
(2) Connect 52P-C159G to no. 8 circuit breaker/relay panel assembly.		
(3) Turn on electrical power (A1-F18AC-LMM-000).		
(4) Does 28vdc exist at 52P-J080 pin 20?	x	y
x. Isolate between no. 8 circuit breaker/relay panel assembly wiring and circuit breaker 60CBC026 (A1-F18AC-420-300, WP030 00) and do step z.	-	-
y. Isolate between no. 7 circuit breaker/relay panel assembly wiring and relay 22K-C103 (A1-F18AC-420-300, WP027 00) and do step z.	-	-
z. If installed, remove radar jumper hose assembly and if connected, disconnected, set, removed, or opened during this procedure, make sure the items listed below are connected, disconnected, installed, set, or closed:		
(1) Disconnect pressure gage from radar liquid coolant service coupling (fill).		
(2) On RDR LCS SVCE panel assembly, set PUMP switch to OFF.		
(3) Disconnect radar jumper nonmetallic hose assembly 74D110019-1001 from radar quick disconnect fittings.		
(4) On SNSR pod control box panel assembly, set RADAR switch to OFF		

Table 1. Code 841 (Continued)

Procedure	No	Yes
(5) 22P-A087		
(6) 22P-A090		
(7) 22P-M086		
(8) 52P-C057C		
(9) 52P-C057D		
(10) 52P-C057E		
(11) 52P-C057F		
(12) 52P-C159G		
(13) 85P-F042D		
(14) 85P-N002A		
(15) Door 6		
(16) Door 10L		
(17) Door 22		
(18) Door 14R		
(19) Door 32R.....	-	-

ORGANIZATIONAL MAINTENANCE

FAULT ISOLATION MANUAL

TROUBLESHOOTING PROCEDURE

Reference Material

Line Maintenance Procedures	A1-F18AC-LMM-000
Environmental Control Systems.....	A1-F18AC-410-500
Radar Liquid Cooling System.....	WP014 00

Alphabetical Index

Subject	Page No.
Table 1.....	1

Record of Applicable Technical Directives

None

Table 1. Code 842

Support Equipment Required

NOTE

Alternate item type designations or part numbers are listed in parentheses.

Part Number or Type Designation	Nomenclature
260-6XLP (AN/USM-311)	Multimeter

Table 1. Code 842 (Continued)


<p align="center">Materials Required</p> <p align="center">None</p> <p align="center">NOTE</p> <p align="center">Radar Liquid Cooling System Schematic (A1-F18AC-410-500, WP014 00) may be used as an aid when doing this procedure.</p> <p align="center">For component locator, refer to A1-F18AC-410-500, WP014 00.</p> <p>Malfunction is caused by one of the items below:</p> <p>Aircraft Wiring</p> <p>No. 2 Circuit Breaker Panel Assembly</p> <p>No. 2 Relay Panel Assembly</p> <p>No. 4 Circuit Breaker Panel Assembly</p> <p>No. 7 Circuit Breaker/Relay Panel Assembly</p> <p>No. 8 Circuit Breaker/Relay Panel Assembly</p> <p>Radar Liquid Cooling Liquid to Air Heat Exchanger</p> <p>Radar Liquid Cooling System Ground Cooling Fan</p> <p>SNSR Pod Control Box Panel Assembly</p>		
Procedure	No	Yes
<p align="center">  </p> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use RX1 scale.</p> <p>To prevent damage to aircraft wiring or equipment, make sure multimeter leads/jumper wires are installed on correct pins. When electrical power is off, 24vdc battery voltage exists on some pins of connectors listed below:</p> <p>52P-C057E</p> <p>52P-C159G</p>		

Table 1. Code 842 (Continued)

Procedure	No	Yes
<p style="text-align: center;">NOTE</p> <p>The question used in logic tree "Does continuity exist" means to test for the items listed below:</p> <ol style="list-style-type: none"> 1. Pin to pin test per procedural step. 2. Shorts to ground. 3. Shorts between surrounding pins on connectors. 4. Shorts between shield and conductors. 5. Shield continuity. 		
a. Do substeps below:		
(1) Apply electrical power (A1-F18AC-LMM-000).		
(2) On GND PWR control panel assembly, set and hold 2 switch to B ON for three seconds.		
(3) On SNSR pod control box panel assembly, set RADAR switch to STBY.		
(4) Does radar liquid cooling system ground cooling fan (cooling fan) operate?	e	b
b. Do substeps below:		
(1) On SNSR pod control box panel assembly, set RADAR switch to OPR.		
(2) Does cooling fan operate?	c	d
c. Replace SNSR pod control box panel assembly (A1-F18AC-742-300, WP017 00) and do step ae	-	-
d. Replace radar liquid cooling liquid to air heat exchanger (A1-F18AC-410-300, WP118 00) and do step ae	-	-
e. Do substeps below:		
(1) On SNSR pod control box panel assembly, set RADAR switch to OPR.		
(2) Does cooling fan operate?	f	c
f. Do substeps below:		
(1) On SNSR pod control box panel assembly, set RADAR switch to OFF.		
(2) On GND PWR control panel assembly, set 2 switch to AUTO.		
(3) Open door 6 (A1-F18AC-LMM-010).		

Table 1. Code 842 (Continued)

Procedure	No	Yes
(4) On RDR LCS SVCE panel assembly, set FAN TEST/ACTR TEST switch to FAN TEST.		
(5) Does cooling fan operate?	g	s
g. Do substeps below:		
(1) Turn off electrical power (A1-F18AC-LMM-000).		
(2) Open doors 10R and 14R (A1-F18AC-LMM-010).		
(3) On 161353 THRU 161359, disconnect 52P-D024D from no. 2 circuit breaker panel assembly.		
(4) On 161360 AND UP, disconnect 52P-D026A from no. 4 circuit breaker panel assembly.		
(5) Disconnect 52P-F058B from no. 2 relay panel assembly.		
(6) On 161353 THRU 161359, does continuity exist from 52P-D024D pin 1 to 52P-F058B pin 3?		
(7) On 161360 AND UP, does continuity exist from 52P-D026A pin 36 to 52P-F058B pin 3?	h	i
h. Isolate defective aircraft wiring (A1-F18A()-WDM-000) and do step ae.....	-	-
i. Do substeps below:		
(1) On 161353 THRU 161359, connect 52P-D024D to no. 2 circuit breaker panel assembly.		
(2) On 161360 AND UP, connect 52P-D026A to no. 4 circuit breaker panel assembly.		
(3) Connect 52P-F058B to no. 2 relay panel assembly.		
(4) Open door 10L (A1-F18AC-LMM-010).		
(5) Remove relay 22K-C103 from no. 7 circuit breaker/relay panel assembly (A1-F18AC-420-300, WP027 00).		
(6) Turn on electrical power (A1-F18AC-LMM-000).		
(7) Does 28vdc exist at 22K-C103 relay socket B1?.....	j	k
j. On 161353 THRU 161359, isolate between no. 2 circuit breaker panel assembly wiring and circuit breaker 22CBD070 (A1-F18AC-420-300, WP024 00) and do step ae.....	-	-

Table 1. Code 842 (Continued)

Procedure	No	Yes
On 161360 AND UP, isolate between no. 4 circuit breaker panel assembly wiring and circuit breaker 22CBD070 (A1-F18AC-420-300, WP025 00) and do step ae.....	-	-
k. Do substeps below:		
(1) Turn off electrical power (A1-F18AC-LMM-000).		
(2) Install relay 22K-C103 in no. 7 circuit breaker/relay panel assembly.		
(3) Remove relay 22K-C083 from no. 7 circuit breaker/relay panel assembly (A1-F18AC-420-300, WP027 00).		
(4) Turn on electrical power (A1-F18AC-LMM-000).		
(5) Does 28vdc exist at 22K-C083 relay socket X1?	l	m
l. Isolate between no. 7 circuit breaker/relay panel assembly wiring, relay 22K-C103, and relay 22K-C083 (A1-F18AC-420-300, WP027 00) and do step ae.....	-	-
m. Do substeps below:		
(1) Turn off electrical power (A1-F18AC-LMM-000).		
(2) Disconnect 52P-C057F from no. 7 circuit breaker/relay panel assembly.		
(3) Does continuity exist from:		
52J-C057F pin 42 to relay socket X2		
52J-C057F pin 16 to relay socket A1		
52J-C057F pin 8 to relay socket B1		
52J-C057F pin 15 to relay socket C1?.....	n	o
n. Repair no. 7 circuit breaker/relay panel assembly wiring (A1-F18AC-420-300, WP027 00) and do step ae	-	-
o. Do substeps below:		
(1) Remove door 22 (A1-F18AC-LMM-010).		
(2) Disconnect 22P-M084 from cooling fan.		
(3) Does continuity exist from 22B-M084 cooling fan receptacle pin 11 to pin 12?.....	p	q
p. Replace radar liquid cooling system ground cooling fan (A1-F18AC-410-300, WP117 00) and do step ae	-	-

Table 1. Code 842 (Continued)

Procedure	No	Yes
<p>q. Does continuity exist from:</p> <p>52P-C057F pin 16 to 22P-M084 pin 2</p> <p>52P-C057F pin 8 to 22P-M084 pin 3</p> <p>52P-C057F pin 15 to 22P-M084 pin 4</p> <p>52P-C057F pin 42 to 22P-M084 pin 11</p> <p>22P-M084 pin 12 to ground</p> <p>22P-M084 pin 13 to ground?</p>	h	r
<p>r. Malfunction is caused by one of the below:</p> <p>(1) Replace relay 22K-C083 on no. 7 circuit breaker/relay panel assembly (A1-F18AC-420-300, WP027 00) or replace radar liquid cooling system ground cooling fan (A1-F18AC-410-300, WP117 00) and do step ae.....</p>	-	-
<p>s. Do substeps below:</p> <p>(1) On RDR LCS SVCE panel assembly, set FAN TEST/ACTR TEST switch to NORM.</p> <p>(2) Turn off electrical power (A1-F18AC-LMM-000).</p> <p>(3) Open door 10L (A1-F18AC-LMM-010).</p> <p>(4) Remove relay 22K-C103 from no. 7 circuit breaker/relay panel assembly (A1-F18AC-420-300, WP027 00).</p> <p>(5) Turn on electrical power (A1-F18AC-LMM-000).</p> <p>(6) Does 28vdc exist at 22K-C103 relay socket B1?.....</p>	t	w
<p>t. Do substeps below:</p> <p>(1) Turn off electrical power (A1-F18AC-LMM-000).</p> <p>(2) Open door 10R (A1-F18AC-LMM-010).</p> <p>(3) On 161353 THRU 161359, disconnect 52P-D024D from no. 2 circuit breaker panel assembly.</p> <p>(4) On 161360 AND UP, disconnect 52P-D026A from no. 4 circuit breaker panel assembly.</p> <p>(5) Disconnect 52P-C057E from no. 7 circuit breaker/relay panel assembly.</p> <p>(6) On 161353 THRU 161359, does continuity exist from 52P-D024D pin 1 to 52P-C057E pin 124?</p>	u	n

Table 1. Code 842 (Continued)

Procedure	No	Yes
(7) On 161360 AND UP, does continuity exist from 52P-D026A pin 36 to 52P-C057E pin 124?	u	n
u. Do substeps below:		
(1) Open door 14R (A1-F18AC-LMM-010).		
(2) Disconnect 52P-F058B from no. 2 relay panel assembly.		
(3) Does continuity exist from:		
52P-F058B pin 7 to 52P-C057E pin 124		
On 161353 THRU 161359, 52P-F058B pin 3 to 52P-D024D pin 1		
On 161360 AND UP, 52P-F058B pin 3 to 52P-D026A pin 36?	h	v
v. Isolate between no. 2 relay panel assembly wiring and relay 12K-F019 (A1-F18AC-420-300, WP032 00) and do step ae	-	-
w. Do substeps below:		
(1) On GND PWR control panel assembly, set and hold 2 switch to B ON for three seconds.		
(2) On SNSR pod control box panel assembly, set RADAR switch to STBY.		
(3) Does 28vdc exist at 22K-C103 relay socket X1?	y	x
x. Replace relay 22K-C103 on no. 7 circuit breaker/relay panel assembly (A1-F18AC-420-300, WP027 00) and do step ae	-	-
y. Do substeps below:		
(1) On SNSR pod control box panel assembly, set RADAR switch to OFF.		
(2) Turn off electrical power (A1-F18AC-LMM-000).		
(3) Disconnect 52P-C057E from no. 7 circuit breaker/relay panel assembly.		
(4) On SNSR pod control box panel assembly, set RADAR switch to STBY.		
(5) Does continuity exist from 52P-C057E pin 7 to pin 78?	z	aa
z. Do substeps below:		
(1) Remove SNSR pod control box panel assembly (A1-F18AC-742-300, WP016 00).		
(2) Does continuity exist from:		
52P-C057E pin 7 to 52P-J080 pin 32		
52P-C057E pin 78 to 52P-J080 pin 20?	h	c

Table 1. Code 842 (Continued)

Procedure	No	Yes
aa. Does continuity exist from 52J-C057E pin 78 to pin 89?	ab	ac
ab. Isolate between no. 7 circuit breaker/relay panel assembly wiring and relay 1K-C055 (A1-F18AC-420-300, WP027 00) and do step ae.....	-	-
ac. Do substeps below:		
(1) Disconnect 52P-C159G from no. 8 circuit breaker/relay panel assembly.		
(2) Does continuity exist from 52P-C159G pin 41 to 52P-C057E pin 89?	h	ad
ad. Isolate between no. 8 circuit breaker/relay panel assembly wiring and circuit breaker 60CBC026 (A1-F18AC-420-300, WP030 00) and do step ae.....	-	-
ae. If disconnected, removed, set, or opened during this procedure, make sure the items listed below are connected, set, installed, or closed:		
(1) RDR LCS SVCE panel assembly FAN TEST/ACTR TEST switch to NORM		
(2) SNSR pod control box panel assembly		
(3) SNSR pod control box panel assembly RADAR switch to OFF		
(4) 22P-M084		
(5) 52P-C159G		
(6) 52P-C057E		
(7) 52P-C057F		
(8) 52P-D024D		
(9) 52P-F058B		
(10) 22K-C103		
(11) 52P-D026A		
(12) 22K-C083		
(13) Door 10R		
(14) Door 10L		
(15) Door 6		

Table 1. Code 842 (Continued)

Procedure	No	Yes
(16) Door 22		
(17) Door 14R.....	-	-

ORGANIZATIONAL MAINTENANCE

FAULT ISOLATION MANUAL

TROUBLESHOOTING PROCEDURE

Reference Material

Line Maintenance Procedures	A1-F18AC-LMM-000
Line Maintenance Access Doors.....	A1-F18AC-LMM-010
Environmental Control Systems.....	A1-F18AC-410-500
Radar Liquid Cooling System.....	WP014 00

Alphabetical Index

Subject	Page No.
Table 1.....	1

Record of Applicable Technical Directives

None

Table 1. Code 843

Support Equipment Required

NOTE

Alternate item type designations or part numbers are listed in parentheses.

Part Number or Type Designation	Nomenclature
260-6XLP (AN/USM-311)	Multimeter

Table 1. Code 843 (Continued)


<p align="center">Materials Required</p> <p align="center">None</p> <p align="center">NOTE</p> <p>Radar Liquid Cooling System Schematic (A1-F18AC-410-500, WP014 00) may be used as an aid when doing this procedure.</p> <p>For component locator, refer to A1-F18AC-410-500, WP014 00.</p> <p>Malfunction is caused by one of the items below:</p> <p>Aircraft Wiring ECS Panel Assembly No. 3 Relay Panel Assembly No. 7 Circuit Breaker/Relay Panel Assembly Radar Liquid Cooling Ram Air Airscoop Actuator RDR LCS SVCE Panel Assembly</p>		
Procedure	No	Yes
<p align="center"></p> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use RX1 scale.</p> <p>To prevent damage to aircraft wiring or equipment, make sure multimeter leads/jumper wires are installed on correct pins. When electrical power is off, 24vdc battery voltage exists on some pins of connectors listed below:</p> <p>52P-C057E</p> <p align="center">NOTE</p> <p>The question used in logic tree "Does continuity exist" means to test for the items listed below:</p> <ol style="list-style-type: none"> 1. Pin to pin test per procedural step. 2. Shorts to ground. 3. Shorts between surrounding pins on connectors. 4. Shorts between shield and conductors. 5. Shield continuity. 		
a. Is radar liquid cooling ram air airscoop open?	b	aj

Table 1. Code 843 (Continued)

Procedure	No	Yes
b. Do substeps below:		
(1) Open door 6 (A1-F18AC-LMM-010).		
(2) Apply electrical power (A1-F18AC-LMM-000).		
(3) On RDR LCS SVCE panel assembly, hold ACTR/FAN TEST switch to ACTR TEST.		
(4) Does airscoop open?.....	s	c
c. Do substeps below:		
(1) Release ACTR/FAN TEST switch.		
(2) Turn off electrical power (A1-F18AC-LMM-000).		
(3) Remove relay 22K-C109 from no. 7 circuit breaker/relay panel assembly (A1-F18AC-420-300, WP027 00).		
(4) Turn on electrical power (A1-F18AC-LMM-000).		
(5) Hold ACTR/FAN TEST switch to ACTR TEST.		
(6) Does 28vdc exist at 22K-C109 relay socket X1?	d	r
d. Do substeps below:		
(1) Release ACTR/FAN TEST switch.		
(2) Turn off electrical power (A1-F18AC-LMM-000).		
(3) Remove door 22 (A1-F18AC-LMM-010).		
(4) On radar liquid cooling ram air airscoop actuator (actuator), operate manual drive to fully extend actuator.		
(5) Disconnect 22P-M076 from actuator.		
(6) Does continuity exist from 22A-M076 actuator receptacle pin 2 to pin 3?	e	f
e. Replace radar liquid cooling ram air airscoop actuator (A1-F18AC-410-300, WP121 00) and do step ap	-	-
f. Do substeps below:		
(1) Disconnect 52P-C057F from no. 7 circuit breaker/relay panel assembly.		

Table 1. Code 843 (Continued)

Procedure	No	Yes
(2) Does continuity exist from:		
22P-M076 pin 3 to 22P-M076 pin 11		
22P-M076 pin 2 to 52P-C057F pin 26?.....	g	h
g. Isolate defective aircraft wiring (A1-F18A()-WDM-000) and do step ap.....	-	-
h. Does continuity exist from 52J-C057F pin 26 to 22K-C109 relay socket X1?.....	i	j
i. Isolate between no. 7 circuit breaker/relay panel assembly wiring and relay 22K-C109 (A1-F18AC-420-300, WP027 00) and do step ap	-	-
j. Does continuity exist from 52J-C057F pin 89 to 22K-C109 relay socket B2?.....	i	k
k. Do substeps below:		
(1) On F/A-18A AND F/A-18B, remove door 32R (A1-F18AC-LMM-010).		
(2) On F/A-18A AND F/A-18B, disconnect 85P-N002A from Signal Data Converter CV-3493/ASM-612.		
(3) On F/A-18A AND F/A-18B, does continuity exist from 85P-N002A pin 20 to 52P-C057F pin 89?.....	g	l
(4) On F/A-18C AND F/A-18D, open door 14R (A1-F18AC-LMM-010).		
(5) On F/A-18C AND F/A-18D, disconnect 85P-F042D from Signal Data Computer CP-1726/ASQ-194.		
(6) On F/A-18C AND F/A-18D, does continuity exist from 85P-F042D pin 85 to 52P-C057F pin 89?.....	g	l
l. Do substeps below:		
(1) Open door 13L (A1-F18AC-LMM-010).		
(2) Disconnect 52P-E059 from no. 3 relay panel assembly.		
(3) Does continuity exist from 52J-E059 pin 87 to 52J-E059 pin 89?	m	n
m. Isolate between no. 3 relay panel assembly wiring and relay 12K-E020 (A1-F18AC-420-300, WP035 00) and do step ap	-	-
n. Do substeps below:		
(1) Open door 13R (A1-F18AC-LMM-010).		
(2) Disconnect 70P-F001B from Air Data Computer CP-1334/A.		

Table 1. Code 843 (Continued)

Procedure	No	Yes
(3) On ECS panel assembly (cockpit, right console), set MODE switch to MAN.		
(4) Does continuity exist from 52P-E059 pin 89 to 70P-F001B pin 86?	o	q
o. Do substeps below:		
(1) Remove ECS panel assembly (A1-F18AC-410-300, WP004 00).		
(2) Does continuity exist from:		
52P-J078 pin 27 to 70P-F001B pin 86		
52P-J078 pin 28 to 52P-E059 pin 89?	g	p
p. Replace ECS panel assembly (A1-F18AC-410-300, WP004 00) and do step ap	-	-
q. Does continuity exist from 52P-E059 pin 87 to 52P-C057F pin 67?	g	i
r. Do substeps below:		
(1) Release ACTR/FAN TEST switch.		
(2) Turn off electrical power (A1-F18AC-LMM-000).		
(3) On F/A-18A AND F/A-18B, open door 32R (A1-F18AC-LMM-010).		
(4) On F/A-18A AND F/A-18B, disconnect 85P-N002A from Signal Data Converter CV-3493/ASM-612.		
(5) On F/A-18A AND F/A-18B, does continuity exist from 85P-N002A pin 20 to 52P-C057F pin 89?	g	i
(6) On F/A-18C AND F/A-18D, open door 14R (A1-F18AC-LMM-010).		
(7) On F/A-18C AND F/A-18D, disconnect 85P-F042D from Signal Data Computer CP-1726/ASQ-194.		
(8) On F/A-18C AND F/A-18D, does continuity exist from 85P-F042D pin 85 to 52P-C057F pin 89?	g	i
s. Do substeps below:		
(1) Release ACTR/FAN TEST switch.		
(2) Turn off electrical power (A1-F18AC-LMM-000).		
(3) Remove door 22 (A1-F18AC-LMM-010).		
(4) Disconnect 22P-M076 from radar liquid cooling ram air airscoop actuator.		

Table 1. Code 843 (Continued)

Procedure	No	Yes
(5) Turn on electrical power (A1-F18AC-LMM-000).		
(6) On RDR LCS SVCE panel assembly, hold ACTR/FAN TEST switch to ACTR TEST.		
(7) Does 28vdc exist at 22P-M076 pin 11?	t	ao
t. Does 28vdc exist at 22P-M076 pin 12?	u	x
u. Do substeps below:		
(1) Release ACTR TEST switch.		
(2) Turn off electrical power (A1-F18AC-LMM-000).		
(3) Remove relay 22K-C075 from no. 7 circuit breaker/relay panel assembly (A1-F18AC-420-300, WP027 00).		
(4) Turn on electrical power (A1-F18AC-LMM-000).		
(5) Does 28vdc exist at 22K-C075 relay socket B2?	v	w
v. Isolate between no. 7 circuit breaker/relay panel assembly wiring and circuit breaker 22CBC074 (A1-F18AC-420-300, WP027 00) and do step ap	-	-
w. Replace relay 22K-C075 on no. 7 circuit breaker/relay panel assembly (A1-F18AC-420-300, WP027 00) and do step ap	-	-
x. Do substeps below:		
(1) Release ACTR TEST switch.		
(2) Turn off electrical power (A1-F18AC-LMM-000).		
(3) Remove relay 22K-C075 from no. 7 circuit breaker/relay panel assembly (A1-F18AC-420-300, WP027 00).		
(4) Turn on electrical power (A1-F18AC-LMM-000).		
(5) Does 28vdc exist at 22K-C075 relay socket X1?	y	af
y. Do substeps below:		
(1) Turn off electrical power (A1-F18AC-LMM-000).		
(2) Disconnect 22P-A090 from RDR LCS SVCE panel assembly (door 6).		
(3) Turn on electrical power (A1-F18AC-LMM-000).		
(4) Does 28vdc exist from 22P-A090 pin 13?	z	ab

Table 1. Code 843 (Continued)

Procedure	No	Yes
z. Do substeps below:		
(1) Turn off electrical power (A1-F18AC-LMM-000).		
(2) Open door 10L (A1-F18AC-LMM-010).		
(3) Disconnect 52P-C057D from no. 7 circuit breaker/relay panel assembly.		
(4) Does continuity exist from 22P-A090 pin 13 to 52P-C057D pin 42?	g	aa
aa. Isolate between no. 7 circuit breaker/relay panel assembly wiring and circuit breaker 22CBC106 (A1-F18AC-420-300, WP027 00) and do step ap	-	-
ab. Do substeps below:		
(1) Turn off electrical power (A1-F18AC-LMM-000).		
(2) Does continuity exist from 22J-A090 pin 13 to pin 14?	ac	ad
ac. Replace RDR LCS SVCE panel assembly (A1-F18AC-410-300, WP125 00) and do step ap.	-	-
ad. Do substeps below:		
(1) Open door 10L (A1-F18AC-LMM-010).		
(2) Disconnect 52P-C057E from no. 7 circuit breaker/relay panel assembly.		
(3) Does continuity exist from 22P-A090 pin 14 to 52P-C057E pin 25?	g	ae
ae. Isolate between no. 7 circuit breaker/relay panel assembly wiring and relay 22K-C075 (A1-F18AC-420-300, WP027 00) and do step ap	-	-
af. Do substeps below:		
(1) Turn off electrical power (A1-F18AC-LMM-000).		
(2) Open doors 10L and 13L (A1-F18AC-LMM-010).		
(3) Disconnect 52P-E059 from no. 3 relay panel assembly.		
(4) Disconnect 52P-C057F from no. 7 circuit breaker/relay panel assembly.		
(5) Remove ECS panel assembly (A1-F18AC-410-300, WP004 00).		
(6) Does continuity exist from:		
52P-E059 pin 87 to 52P-C057F pin 67		
52P-E059 pin 89 to 52P-J078 pin 28?	g	ag

Table 1. Code 843 (Continued)

Procedure	No	Yes
ag. Does continuity exist from 22K-C075 relay socket X2 to 52J-C057F pin 67?	ae	ah
ah. Does continuity exist from 52J-E059 pin 87 to pin 89?	h	ai
ai. Do substeps below:		
(1) Connect 52P-E059 to no. 3 relay panel assembly.		
(2) Connect 52P-C057F to no. 7 circuit breaker/relay panel assembly.		
(3) Turn on electrical power (A1-F18AC-LMM-000).		
(4) Does continuity exist from 52P-J078 pin 28 to 22K-C075 relay socket X2?	aa	h
aj. Do substeps below:		
(1) Remove door 22 (A1-F18AC-LMM-010).		
(2) Disconnect 22P-M076 from radar liquid cooling ram air airscoop actuator.		
(3) Turn on electrical power (A1-F18AC-LMM-000).		
(4) Does 28vdc exist at 22P-M076 pin 12?	al	ak
ak. Do substeps below:		
(1) Turn off electrical power (A1-F18AC-LMM-000).		
(2) Does continuity exist from 22P-M076 pin 13 to aircraft ground?	g	e
al. Does 28vdc exist at 22P-M076 pin 11?	am	an
am. Do substeps below:		
(1) Turn off electrical power (A1-F18AC-LMM-000).		
(2) Remove relay 22K-C075 from no. 7 circuit breaker/relay panel assembly (A1-F18AC-420-300, WP027 00).		
(3) Turn on electrical power (A1-F18AC-LMM-000).		
(4) Does 28vdc exist at 22K-C075 relay socket B2?	v	w
an. Do substeps below:		
(1) Turn off electrical power (A1-F18AC-LMM-000).		

Table 1. Code 843 (Continued)

Procedure	No	Yes
(2) Remove relay 22K-C075 from no. 7 circuit breaker/relay panel assembly (A1-F18AC-420-300, WP027 00).		
(3) Turn on electrical power (A1-F18AC-LMM-000).		
(4) Does 28vdc exist at 22K-C075 relay socket X1?	y	af
ao. Do substeps below:		
(1) Release ACTR TEST switch.		
(2) Turn off electrical power (A1-F18AC-LMM-000).		
(3) Does continuity exist from 22P-M076 pin 13 to aircraft ground?.....	g	e
ap. If disconnected, removed, or opened during this procedure, make sure the items listed below are connected, installed, or closed:		
(1) ECS panel assembly		
(2) 22P-A090		
(3) 22P-M076		
(4) 52P-C057D		
(5) 52P-C057E		
(6) 52P-C057F		
(7) 52P-E059		
(8) 22K-C109		
(9) 85P-N002A		
(10) 22K-C075		
(11) 70P-F001B		
(12) 85P-F042D		
(13) Door 6		
(14) Door 10L		
(15) Door 13L		
(16) Door 13R		

Table 1. Code 843 (Continued)

Procedure	No	Yes
(17) Door 14R		
(18) Door 22		
(19) Door 32R.....	-	-

ORGANIZATIONAL MAINTENANCE

FAULT ISOLATION MANUAL

TROUBLESHOOTING PROCEDURE

This WP supersedes WP032 00, dated 1 November 1993.

Reference Material

Line Maintenance Procedures	A1-F18AC-LMM-000
Servicing - Radar Liquid Cooling System.....	WP035 00
Radar System	A1-F18AC-742-500
Locator	WP003 00
Radar System	A1-F18AH-742-500
Locator	WP003 00
Radar System	A1-F18AC-742-300
Extension and Stowage of Radar Set AN/APG-65 and Panel Assembly Screw Repair.....	WP003 00
Radar System	A1-F18AH-742-300
Extension and Stowage of Radar Set AN/APG-73 and Panel Assembly Screw Repair.....	WP003 00

Alphabetical Index

Subject	Page No.
Table 1.....	1

Record of Applicable Technical Directives

Type/ Number	Date	Title and ECP No.	Date Incorp.	Remarks
F/A-18 AFC 211	-	AN/APG-65, Replacement With AN/APG-73 (ECP-MDA-F/A-18-00508)	1 Jul 95	ECP Cover- age Only

Table 1. Code 046

Support Equipment Required
None
Materials Required
None

Table 1. Code 046 (Continued)

NOTE		
Radar Liquid Coolant and Cooling Air Schematic (A1-F18AC-742-500, WP007 00 or A1-F18AH-742-500, WP007 00) may be used as an aid when doing this procedure.		
For component locator, refer to A1-F18AC-742-500, WP003 00 or A1-F18AH-742-500, WP003 00.		
Malfunction is caused by one of the items below:		
Pantograph Assembly Radar Transmitter T-1377/APG-65		
Procedure	No	Yes
a. Do substeps below:		
(1) ON 161353 THRU 164279; ALSO 164627 THRU 164897 BEFORE F/A-18 AFC 211, extend Radar Set AN/APG-65 (A1-F18AC-742-300, WP003 00).		
(2) ON 164898 AND UP; ALSO 164627 THRU 164897 AFTER F/A-18 AFC 211, extend Radar Set AN/APG-73 (A1-F18AH-742-300, WP003 00).		
(3) On pantograph assembly inspect the radar liquid cooling lines for kinks, signs of leaking, mating of couplings, or other damage.		
(4) Do radar liquid cooling lines appear to be damaged?	c	b
b. Replace pantograph assembly (A1-F18AC-742-300, WP013 00 or A1-F18AH-742-300, WP013 00)	-	-
c. Replace Radar Transmitter T-1377/APG-65 (A1-F18AC-742-300, WP007 00 or A1-F18AH-742-300, WP007 00) and do step d.	-	-
d. Does operational readiness test again return system maintenance code 046 ?	j	e
e. Is system maintenance codes 841 or 985 returned?	i	f
f. Is system maintenance code 841 returned?	h	g
g. Do troubleshooting procedure (A1-F18AC-FIM-000, WP021 00). Do step j	-	-
h. Do troubleshooting procedure (A1-F18AC-FRM-000, WP003 00 or A1-F18AE-FRM-000, WP003 00). Do step j	-	-
i. Do radar liquid cooling system servicing (A1-F18AC-LMM-000, WP035 00). Do step j	-	-
j. Do substeps below:		
(1) ON 161353 THRU 164279; ALSO 164627 THRU 164897 BEFORE F/A-18 AFC 211, stow Radar Set AN/APG-65 (A1-F18AC-742-300, WP003 00)		
(2) ON 164898 AND UP; ALSO 164627 THRU 164897 AFTER F/A-18 AFC 211, stow Radar Set AN/APG-73 (A1-F18AH-742-300, WP003 00)	-	-

ORGANIZATIONAL MAINTENANCE

FAULT ISOLATION MANUAL

TROUBLESHOOTING PROCEDURE

Reference Material

None

Alphabetical Index

Subject	Page No.
Temperature/Resistance Chart 1, Figure 1	2
Temperature/Resistance Chart 2, Figure 2	3
Temperature/Resistance Chart 3, Figure 3	4
Temperature/Resistance Chart 4, Figure 4	5
Temperature/Resistance Chart 5, Figure 5	6

Record of Applicable Technical Directives

None

NOTE: THIS CHART APPLICABLE ONLY FOR MEASUREMENT BETWEEN PINS LISTED BELOW:

AIRCRAFT CONNECTOR ON ACS TEMPERATURE/FLOW CONTROLLER

22P-00028-PIN 12 TO PIN 13

22P-00028-PIN 15 TO PIN 16

22P-00028-PIN 42 TO PIN 43

AVIONICS AIRFLOW/TEMPERATURE SENSOR

22A-E004-PIN 2 TO PIN 10

CABIN AIRFLOW/TEMPERATURE SENSOR

22A-E003-PIN 2 TO PIN 10

VENT SUIT TEMPERATURE SENSOR

22A-D005-PIN 2 TO PIN 4

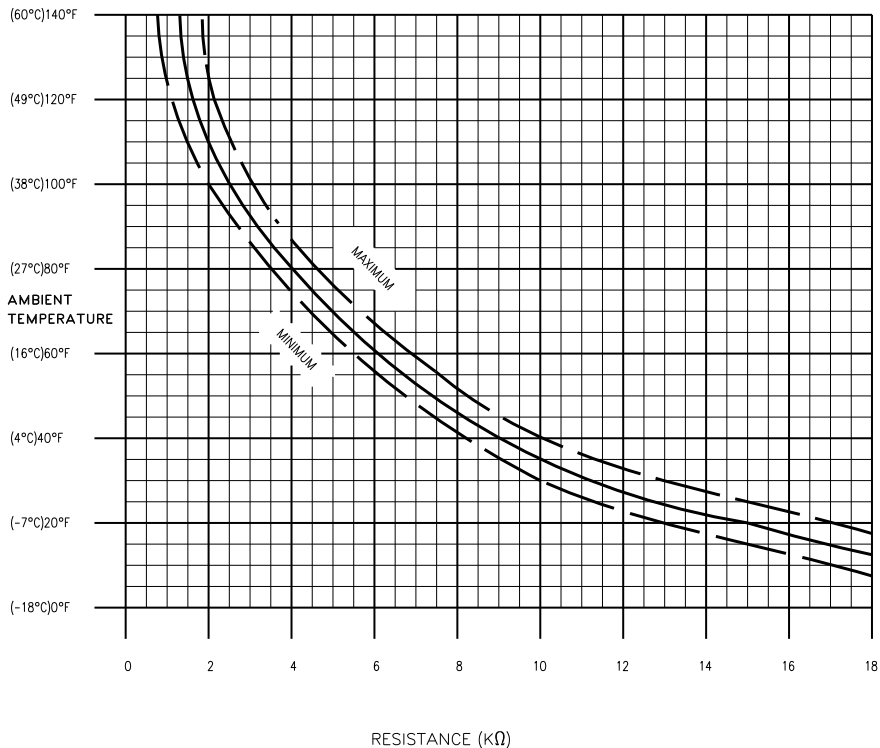


Figure 1. Temperature/Resistance Chart 1

NOTE: THIS CHART APPLICABLE ONLY FOR MEASUREMENT BETWEEN
PINS LISTED BELOW:

AIRCRAFT CONNECTOR ON ACS TEMPERATURE/FLOW CONTROLLER
22P-D0028-PIN 50 TO PIN 55

CABIN AIRFLOW/TEMPERATURE SENSOR
22A-E003-PIN 3 TO PIN 4

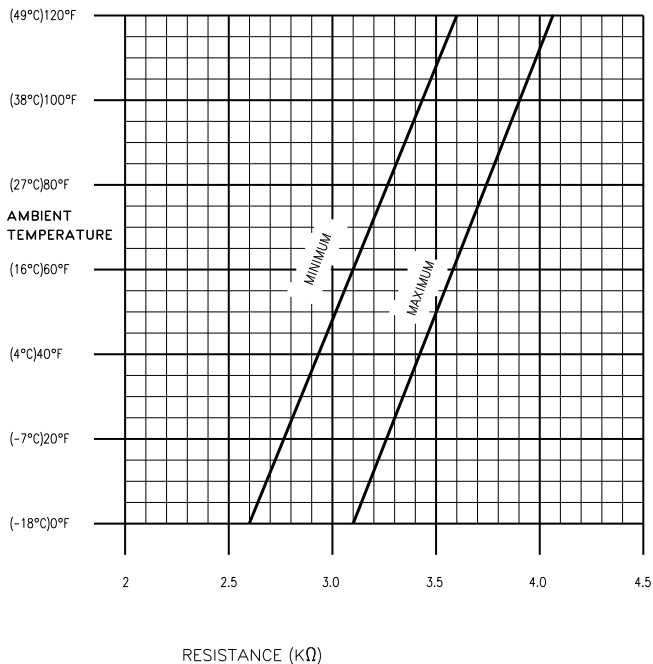


Figure 2. Temperature/Resistance Chart 2

NOTE: THIS CHART APPLICABLE ONLY FOR MEASUREMENT BETWEEN
PINS LISTED BELOW:

AIRCRAFT CONNECTOR ON ACS TEMPERATURE/FLOW CONTROLLER
22P-D0028-PIN 50 TO PIN 54

CABIN AIRFLOW/TEMPERATURE SENSOR
22A-E003-PIN 3 TO PIN 11

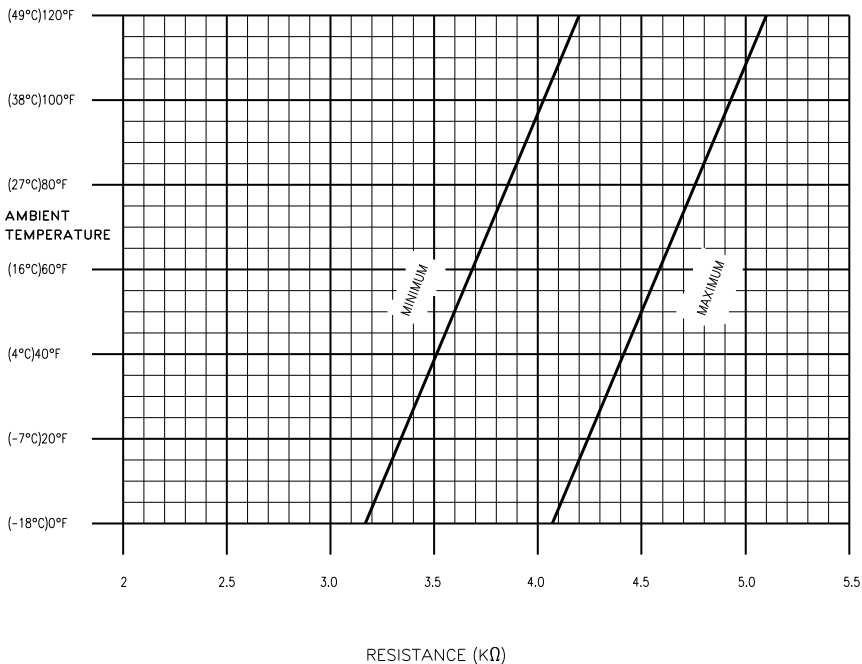


Figure 3. Temperature/Resistance Chart 3

NOTE: THIS CHART APPLICABLE ONLY FOR MEASUREMENT BETWEEN
PINS LISTED BELOW:

AIRCRAFT CONNECTOR ON ACS TEMPERATURE/FLOW CONTROLLER
22P-D0028-PIN 2 TO PIN 7

CABIN AIRFLOW/TEMPERATURE SENSOR
22A-E003-PIN 3 TO PIN 11

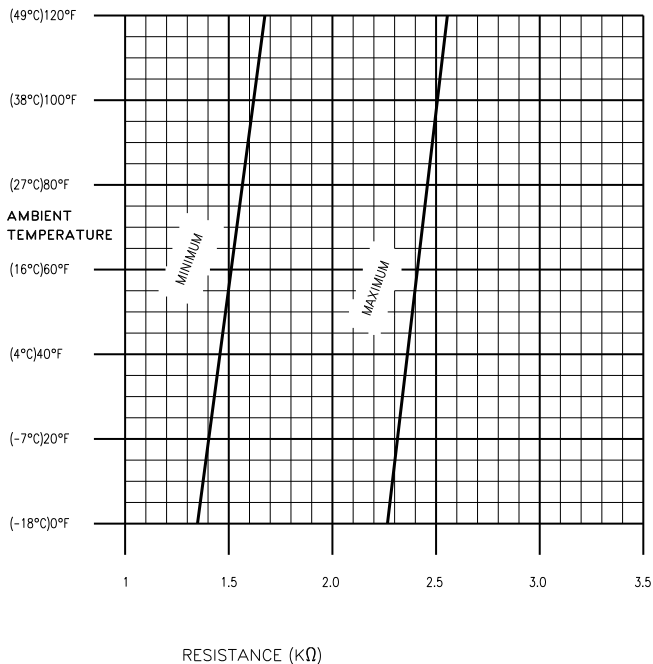


Figure 4. Temperature/Resistance Chart 4

NOTE: THIS CHART APPLICABLE ONLY FOR MEASUREMENT BETWEEN
PINS LISTED BELOW:

AIRCRAFT CONNECTOR ON ACS TEMPERATURE/FLOW CONTROLLER
22P-D0028-PIN 3 TO PIN 7

CABIN AIRFLOW/TEMPERATURE SENSOR
22A-E003-PIN 3 TO PIN 4

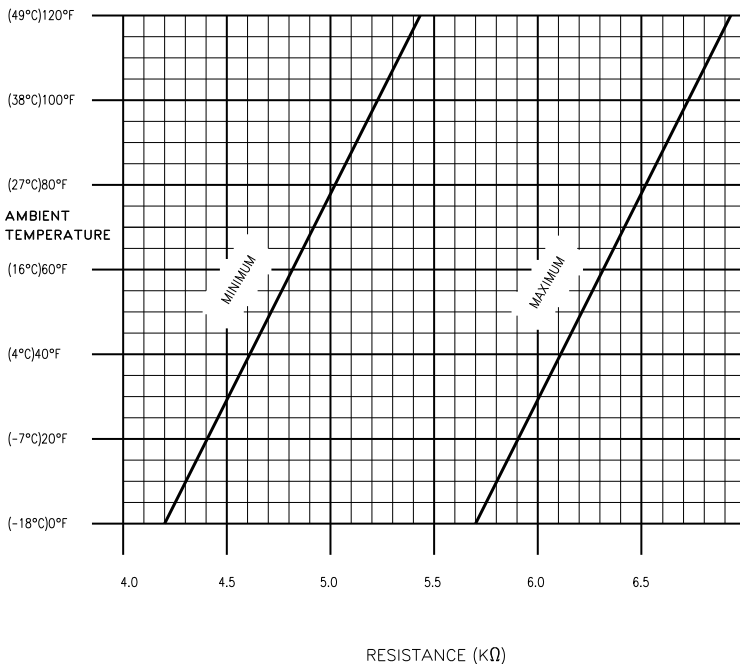


Figure 5. Temperature/Resistance Chart 5

ORGANIZATIONAL MAINTENANCE

FAULT ISOLATION MANUAL

TROUBLESHOOTING PROCEDURE

Reference Material

Line Maintenance Procedures	A1-F18AC-LMM-000
Line Maintenance Access Doors.....	A1-F18AC-LMM-010
Environmental Control Systems.....	A1-F18AC-410-500
Radar Liquid Cooling System.....	WP014 00

Alphabetical Index

Subject	Page No.
Table 1.....	1

Record of Applicable Technical Directives

None

Table 1. Code 844

Support Equipment Required

NOTE

Alternate item type designations or part numbers are listed in parentheses.

Part Number or Type Designation	Nomenclature
260-6XLP (AN/USM-311)	Multimeter

Table 1. Code 844 (Continued)


Materials Required		
None		
NOTE		
Radar Liquid Cooling System Schematic (A1-F18AC-410-500, WP014 00) may be used as an aid when doing this procedure.		
For component locator, refer to A1-F18AC-410-500, WP014 00.		
Malfunction is caused by one of the items below:		
Aircraft Wiring No. 2 Circuit Breaker Panel Assembly No. 2 Relay Panel Assembly No. 4 Circuit Breaker Panel Assembly No. 7 Circuit Breaker/Relay Panel Assembly No. 8 Circuit Breaker/Relay Panel Assembly Radar Liquid Cooling High Temperature Warning Sensor Radar Liquid Cooling System Ground Cooling Fan Signal Data Converter CV-3493/ASM-612 SNSR Pod Control Box Panel Assembly		
Procedure	No	Yes
<div style="text-align: center;"></div> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use RX1 scale.</p> <p>To prevent damage to aircraft wiring or equipment make sure multimeter leads/jumper wires are installed on correct pins. When electrical power is off, 24vdc battery voltage exists on some pins of connectors listed below:</p> <p>52P-C159G 52P-C057E</p>		

Table 1. Code 844 (Continued)

Procedure	No	Yes
<p style="text-align: center;">NOTE</p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"> 1. Pin to pin test per procedural step. 2. Shorts to ground. 3. Shorts between surrounding pins on connectors. 4. Shorts between shield and conductors. 5. Shield continuity. 		
a. Do substeps below:		
(1) Open door 22 (A1-F18AC-LMM-010).		
(2) Apply electrical power (A1-F18AC-LMM-000).		
(3) On GND PWR control panel assembly, set and hold 2 switch to B ON for three seconds.		
(4) On SNSR pod control box panel assembly, set RADAR switch to STBY.		
(5) Does radar liquid cooling system ground cooling fan (door 22) operate?	d	b
b. Do substeps below:		
(1) On SNSR pod control box panel assembly, set RADAR switch to OPR.		
(2) Does radar liquid cooling system ground cooling fan operate?	c	ad
c. Do substeps below:		
(1) If applied, remove electrical power (A1-F18AC-LMM-000).		
(2) Replace SNSR pod control box panel assembly (A1-F18AC-742-300, WP017 00) and do step ai.	-	-
d. Do substeps below:		
(1) On SNSR pod control box panel assembly, set RADAR switch to OPR.		
(2) Does radar liquid cooling system ground cooling fan operate?	e	c
e. Do substeps below:		
(1) On SNSR pod control box panel assembly, set RADAR switch to OFF.		
(2) On GND PWR control panel assembly, set 2 switch to AUTO.		

Table 1. Code 844 (Continued)

Procedure	No	Yes
(3) Open door 6 (A1-F18AC-LMM-010).		
(4) On RDR LCS SVCE panel assembly, set FAN TEST/ACTR TEST switch to FAN TEST.		
(5) Does radar liquid cooling system ground cooling fan operate?.....	f	j
f. Do substeps below:		
(1) Turn off electrical power (A1-F18AC-LMM-000).		
(2) Disconnect 22P-A090 from RDR LCS SVCE panel assembly (door 6).		
(3) Turn on electrical power (A1-F18AC-LMM-000).		
(4) Does 28vdc exist at 22P-A090 pin 16?.....	g	y
g. Do substeps below:		
(1) Turn off electrical power (A1-F18AC-LMM-000).		
(2) Open door 10R (A1-F18AC-LMM-010).		
(3) On 161353 THRU 161359, disconnect 52P-D024D from no. 2 circuit breaker panel assembly.		
(4) On 161360 AND UP, disconnect 52P-D026A from no. 4 circuit breaker panel assembly.		
(5) On 161353 THRU 161359, does continuity exist from 52P-D024D pin 1 to 22P-A090 pin 16?	h	i
(6) On 161360 AND UP, does continuity exist from 52P-D026A pin 36 to 22P-A090 pin 16?	h	i
h. Isolate defective aircraft wiring (A1-F18AC()-WDM-000) and do step ai.....	-	-
i. On 161353 THRU 161359, isolate between no. 2 circuit breaker panel assembly wiring and circuit breaker 22CBD070 (A1-F18AC-420-300), WP024 00) and do step ai.	-	-
On 161360 AND UP, isolate between no. 4 circuit breaker panel assembly wiring and circuit breaker 23CBD070 (A1-F18AC-420-300, WP025 00) do step ai	-	-
j. Do substeps below:		
(1) Remove electrical power (A1-F18AC-LMM-000).		

Table 1. Code 844 (Continued)

Procedure	No	Yes
(2) Open doors 10R, 10L, and 14R (A1-F18AC-LMM-010).		
(3) On 161353 THRU 161359, disconnect 52P-D024D from no. 2 circuit breaker panel assembly.		
(4) On 161360 AND UP, disconnect 52P-D026A from no. 4 circuit breaker panel assembly.		
(5) Disconnect 52P-F058B from no. 2 relay panel assembly.		
(6) Disconnect 52P-C057E from no. 7 circuit breaker/relay panel assembly.		
(7) Does continuity exist from:		
On 161353 THRU 161359, 52P-F058B pin 3 to 52P-D024D pin 1		
On 161360 AND UP, 52P-F058B pin 3 to 52P-D026A pin 36		
52P-F058B pin 7 to 52P-C057E pin 124?	h	k
k. Does continuity exist from 52J-F058B pin 3 to pin 7?	l	m
l. Isolate between no. 2 relay panel assembly wiring and relay 12K-F019 (A1-F18AC-420-300, WP032 00) and do step ai.	-	-
m. Do substeps below:		
(1) On 161353 THRU 161359, connect 52P-D024D to no. 2 circuit breaker panel assembly.		
(2) On 161360 AND UP, connect 52P-D026A to no. 4 circuit breaker panel assembly.		
(3) Connect 52P-F058B to no. 2 relay panel assembly.		
(4) Connect 52P-C057E to no. 7 circuit breaker/relay panel assembly.		
(5) Remove relay 22K-C103 from no. 7 circuit breaker/relay panel assembly (A1-F18AC-420-300, WP027 00).		
(6) Turn on electrical power (A1-F18AC-LMM-000).		
(7) Does 28vdc exist at 22K-C103 relay socket B1?	n	o
n. Isolate between no. 7 circuit breaker/relay panel assembly wiring and relay 22K-C103 (A1-F18AC-420-300, WP027 00) and do step ai.	-	-
o. Do substeps below:		
(1) On SNSR pod control box assembly, set RADAR switch to STBY.		
(2) Does 28vdc exist at 22K-C103 relay socket X1?	q	p

Table 1. Code 844 (Continued)

Procedure	No	Yes
p. Do substeps below:		
(1) Turn off electrical power (A1-F18AC-LMM-000).		
(2) Replace no. 7 circuit breaker/relay panel assembly relay 22K-C103 (A1-F18AC-420-300, WP027 00) and do step ai.	-	-
q. Do substeps below:		
(1) Turn off electrical power (A1-F18AC-LMM-000).		
(2) Remove SNSR pod control box assembly (A1-F18AC-742-300, WP017 00).		
(3) Turn on electrical power (A1-F18AC-LMM-000).		
(4) Does 28vdc exist at 52P-J080 pin 20?	t	r
r. Do substeps below:		
(1) Turn off electrical power (A1-F18AC-LMM-000).		
(2) Disconnect 52P-C057E from no. 7 circuit breaker/relay panel assembly.		
(3) Does continuity exist from 52P-J080 pin 32 to 52P-C057E pin 7?	h	s
s. Does continuity exist from 52J-J080 pin 20 to pin 32?	c	n
t. Do substeps below:		
(1) Turn off electrical power (A1-F18AC-LMM-000).		
(2) Disconnect 52P-C057E from no. 7 circuit breaker/relay panel assembly.		
(3) Does continuity exist from 52P-C057E pin 78 to 52P-J080 pin 20?	h	u
u. Does continuity exist from 52J-C057E pin 78 to pin 89?	v	w
v. Isolate between no. 7 circuit breaker/relay panel assembly wiring and relay 1K-C055 (A1-F18AC-420-300, WP027 00) and do step ai.	-	-
w. Do substeps below:		
(1) Disconnect 52P-C159G from no. 8 circuit breaker/relay panel assembly (door 10L).		
(2) Does continuity exist from 52P-C159G pin 41 to 52P-C057E pin 89?	h	x
x. Isolate between no. 8 circuit breaker/relay panel assembly wiring and circuit breaker 60CBC026 (A1-F18AC-420-300, WP030 00) and do step ai.	-	-

Table 1. Code 844 (Continued)


Procedure	No	Yes
y. Do substeps below:		
(1) Turn off electrical power (A1-F18AC-LMM-000).		
(2) Disconnect 22P-M084 from radar liquid cooling system ground cooling fan (fan).		
(3) Does continuity exist from 22B-M084 fan receptacle pin 11 to pin 12?	z	aa
z. Replace radar liquid cooling system ground cooling fan (A1-F18AC-410-300, WP117 00) and do step ai.....	-	-
aa. Do substeps below:		
(1) Disconnect 52P-C057F from no. 7 circuit breaker/relay panel assembly.		
(2) Does continuity exist from:		
52P-C057F pin 16 to 22P-M084 pin 2		
52P-C057F pin 8 to 22P-M084 pin 3		
52P-C057F pin 15 to 22P-M084 pin 4		
52P-C057F pin 42 to 22P-M084 pin 11		
22P-M084 pin 12 to aircraft ground		
22P-M084 pin 13 to aircraft ground?	h	ab
ab. Do substeps below:		
(1) Connect 52P-C057F at no. 7 circuit breaker/relay panel assembly.		
<div style="text-align: center;">  </div>		
<p style="text-align: center;">To prevent damage to electrical connector, do not insert an oversize test lead in a connector, or let lead hang from a pin contact.</p>		
(2) Short pins 11 and 12 of 22P-M084 together.		
(3) Turn on electrical power (A1-F18AC-LMM-000).		
(4) Does 115vac exist from 22P-M084 pin 2, pin 3, and pin 4 to ground?.....	ac	z
ac. Isolate between no. 7 circuit breaker/relay panel assembly wiring, relay 22K-C103, relay 22K-C083; and circuit breakers 22CBC077, 22CBC078, and 22CBC079 (A1-F18AC-420-300, WP027 00) and do step ai.....	-	-
ad. Is there air flow at louver covers (aft of door 22) while radar liquid cooling system ground cooling fan is operating?	z	ae

Table 1. Code 844 (Continued)

Procedure	No	Yes
ae. Do substeps below:		
(1) Turn off electrical power (A1-F18AC-LMM-000).		
(2) Open door 3 (A1-F18AC-LMM-010).		
(3) Disconnect 22P-A088 from radar liquid cooling high temperature warning sensor (sensor).		
(4) Does continuity exist from 22A-A088 sensor receptacle pin A to pin B?	af	ag
af. Replace radar liquid cooling high temperature warning sensor (A1-F18AC-410-300, WP123 00) and do step ai	-	-
ag. Do substeps below:		
(1) On F/A-18A AND F/A-18B, remove door 32R (A1-F18AC-LMM-010).		
(2) On F/A-18A AND F/A-18B, disconnect 85P-N002A from Signal Data Converter CV-3493/ASM-612.		
(3) On F/A-18A AND F/A-18B, does continuity exist from:		
22P-A088 pin B to 85P-N002A pin 19		
22P-A088 pin A to aircraft ground?	h	ah
(4) On F/A-18C AND F/A-18D, open door 14R (A1-F18AC-LMM-010).		
(5) On F/A-18C AND F/A-18D, disconnect 85P-F042D from Signal Data Computer CP-1726/ASQ-194.		
(6) On F/A-18C AND F/A-18D, does continuity exist from:		
22P-A088 pin B to 85P-F042D pin 81		
22P-A088 pin A to aircraft ground?	h	ah
ah. Do substep below:		
(1) On F/A-18A AND F/A-18B, replace Signal Data Converter CV-3493/ASM-612 (A1-F18AC-580-300, WP003 00) and do step ai.....	-	-
(2) On F/A-18C AND F/A-18D, replace Signal Data Computer CP-1726/ASQ-194 (A1-F18AE-580-300, WP003 00) and do step ai	-	-
ai. If disconnected, removed, set, or opened during this procedure, make sure the items listed below are connected, installed, reset, or closed:		
(1) RDR LCS SVCE panel assembly FAN TEST/ACTR TEST switch to NORM		

Table 1. Code 844 (Continued)

Procedure	No	Yes
(2) SNSR pod control box assembly RADAR switch to OFF		
(3) Shorting wire from 22P-M084 pins 11 and 12		
(4) Relay 22K-C103		
(5) 22P-A090		
(6) 52P-D024D		
(7) 52P-F058B		
(8) 52P-C057E		
(9) 52P-C159G		
(10) 22P-M084		
(11) 52P-C057F		
(12) 22P-A088		
(13) 85P-N002A		
(14) 85P-F042D		
(15) 52P-D026A		
(16) SNSR pod control box assembly		
(17) Door 6		
(18) Door 10R		
(19) Door 10L		
(20) Door 14R		
(21) Door 3		
(22) Door 32R		
(23) Door 22	-	-

ORGANIZATIONAL MAINTENANCE

FAULT ISOLATION MANUAL

TROUBLESHOOTING PROCEDURE

This WP supersedes WP075 00, dated 15 December 1987.

Reference Material

Line Maintenance Procedures	A1-F18AC-LMM-000
Line Maintenance Access Doors.....	A1-F18AC-LMM-010
Environmental Control Systems.....	A1-F18AC-410-500
Air Cycle Air Conditioning System.....	WP007 00
Environmental Control Systems.....	A1-F18AC-410-200
Testing.....	WP004 00

Alphabetical Index

Subject	Page No.
Table 1	1

Record of Applicable Technical Directives

None

Table 1. Code 824

Support Equipment Required

NOTE

Alternate item type designations or part numbers are listed in parentheses.

Part Number or Type Designation	Nomenclature
260-6XLP (AN/USM-311)	Multimeter
74D410141-1003 (74D410141-1001)	Test Set, ACS PRESSURE Indicator

Table 1. Code 824 (Continued)


<p style="text-align: center;">Materials Required</p> <p style="text-align: center;">None</p> <p style="text-align: center;">NOTE</p> <p style="text-align: center;">Air Cycle Air Conditioning System Schematic (A1-F18AC-410-500, WP007 00) may be used as an aid when doing this procedure.</p> <p style="text-align: center;">For component locator, refer to A1-F18AC-410-500, WP007 00.</p> <p>Malfunction is caused by one of the items below:</p> <p>ACS Temperature/Flow Controller Air Data Computer Aircraft Wiring Compressor Protective Temperature Sensor Condenser/Reheater Heat Exchanger ECS Panel Assembly No. 3 Relay Panel Assembly Primary Ejector Valve Primary Heat Exchanger Secondary Ejector Valve Secondary Heat Exchanger System Flow Modulating Pressure Regulator Tubing Turbine Protective Temperature Sensor Water Extractor</p>		
Procedure	No	Yes
<p style="text-align: center;"></p> <p style="text-align: center;">To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use RX1 scale.</p>		

Table 1. Code 824 (Continued)

Procedure	No	Yes
<p style="text-align: center;">NOTE</p> <p>The question used in logic tree "Does continuity exist" means to test for the items listed below:</p> <ol style="list-style-type: none"> 1. Pin to pin test per procedural step. 2. Shorts to ground. 3. Shorts between surrounding pins on connectors. 4. Shorts between shield and conductors. 5. Shield continuity. <p>When testing for resistance, also test for shorts to ground.</p> <p>WP004 00, table 2 of the A1-F18AC-410-200 manual can be used to identify both a faulty Environmental Control System (ECS), and the component most likely to have caused the faulty condition. Refer to this table to reduce maintenance time, or if problems are encountered during troubleshooting.</p>		
a. Do substeps below:		
(1) Make sure electrical power is off (A1-F18AC-LMM-000).		
(2) Open door 10R (A1-F18AC-LMM-010).		
(3) On 161353 THRU 161359, on no. 2 circuit breaker panel assembly, open ECS CONT (zone D13) circuit breaker.		
(4) On 161360 AND UP, on no. 4 circuit breaker panel assembly, open ECS CONT (zone C6) circuit breaker.		
(5) Disconnect 22P-D002A from ACS temperature/flow controller.		
(6) Does 69 to 90 ohms exist from 22P-D002A pin 18 to pin 26?	b	g
b. Do substeps below:		
(1) Remove door 129R (A1-F18AC-LMM-010).		
(2) Disconnect 22P-R015A from system flow modulating pressure regulator (regulator).		
(3) Does 69 to 90 ohms exist from 22L-R015 receptacle J1, pin 1 to pin 3?	c	d
c. Replace system flow modulating pressure regulator (A1-F18AC-410-300, WP035 00) and do step ar	-	-
d. Do substeps below:		
(1) Open door 13L (A1-F18AC-LMM-010).		
(2) Disconnect 52P-E059 from no. 3 relay panel assembly.		
(3) Does continuity exist from 52J-E059 pin 34 to pin 36?	e	f

Table 1. Code 824 (Continued)


Procedure	No	Yes
e. Isolate between no. 3 relay panel assembly wiring and relay 22K-E145 (A1-F18AC-420-300, WP036 00) and do step aq.....	-	-
f. Isolate defective aircraft wiring (A1-F18A()-WDM-000) and do step aq.....	-	-
g. Do substeps below:		
(1) Remove door 129R (A1-F18AC-LMM-010).		
(2) Observe position indicator on system flow modulating pressure regulator. Is valve open?	c	h
h. Does continuity exist from 22P-D002A pin 42 to pin 49?	i	j
i. Do substeps below:		
(1) Remove door 129R (A1-F18AC-LMM-010).		
(2) Disconnect 22P-R015B from system flow modulating pressure regulator (regulator).		
(3) Does continuity exit from 22L-R015 regulator receptacle J2 pin 2 to pin 4?.....	c	f
j. Do substeps below:		
(1) Open door 10R.		
(2) Hook up proximity switch control (A1-F18AC-LMM-000).		
(3) Start and operate engines (A1-F18AC-LMM-000).		
(4) Make the following cockpit control settings:		
Engine compressor discharge pressure (CDP)	90 +/- 2 psi	
	(single or dual engine operation)	
ECS MODE	OFF RAM	
SUIT/CABIN TEMP	full COLD	
(5) On 161353 THRU 161359, on no. 4 circuit breaker panel assembly, open ADC (zone D8) circuit breaker.		
(6) On 161360 AND UP, on no. 2 circuit breaker panel assembly, open ADC (zone B12) circuit breaker.		
<div style="text-align: center;">  </div>		
<p style="text-align: center;">Components may be damaged due to overheat with ADC circuit breaker open and proximity switch set to WT OFF WHLS for more than 10 seconds.</p>		
(7) On proximity switch control, set LEFT GEAR switch to WT OFF WHLS for not more than 10 seconds while doing step (8).		

Table 1. Code 824 (Continued)

Procedure	No	Yes
(8) Does air flow from right ECS exhaust louver or in front of heat exchanger face in-board of nacelle?	r	k
k. Do substeps below:		
(1) Shutdown engines (A1-F18AC-LMM-000).		
(2) On 161353 THRU 161719, remove door 39R (A1-F18AC-LMM-010).		
(3) On 161720 AND UP, remove door 129R (A1-F18AC-LMM-010).		
(4) Connect ACS pressure indicator test set gauge (0 to 160 psig) to ECS test port (I) (A1-F18AC-410-200, WP004 00).		
(5) Start and operate engines (A1-F18AC-LMM-000).		
(6) Make the following cockpit control settings:		
Engine compressor discharge pressure (CDP)	90 +/- 2 psi (single or dual engine operation)	
ECS MODE	OFF RAM	
SUIT/CABIN TEMP	FULL COLD	
(7) Measure pressure at ECS test port (I).		
(8) Is pressure >52 psig for single engine operation or >55 psig for dual engine operation?	l	m
l. Replace primary heat exchanger (A1-F18AC-410-300, WP027 00) and do step aq.....	-	-
m. Do substeps below:		
(1) Shut down engines (A1-F18AC-LMM-000).		
(2) Disconnect 22P-N017 from primary ejector valve.		
(3) Turn on electrical power (A1-F18AC-LMM-000).		
(3) Does 28vdc exist at 22P-N017 pin 3 to pin 1 (ground) (normal indication 28vdc not present)?	n	o
n. Replace primary ejector valve (A1-F18AC-410-300, WP028 00) and do step aq.	-	-
o. Isolate between defective aircraft wiring and relay 22K-E039 and do step aq.	-	-
p. Do substeps below:		
(1) Shut down engines (A1-F18AC-LMM-000).		
(2) Inspect secondary heat exchanger (secondary heat exchanger ram air inlet) for damage, corrosion, or obstructions. Is heat exchanger serviceable?	q	x
q. Replace secondary heat exchanger (A1-F18AC-410-300, WP031 00) and do step aq	-	-
r. Does air flow from left ECS exhaust louver?	s	p

Table 1. Code 824 (Continued)

Procedure	No	Yes
s. Do substeps below:		
(1) Shut down APU (A1-F18AC-LMM-000).		
(2) Remove door 34R (A1-F18AC-LMM-010).		
(3) Disconnect 22P-N014 from secondary ejector valve.		
(4) Apply external electrical power (A1-F18AC-LMM-000).		
(5) Does 28vdc exist at 22P-N014 pin 3 to pin 1 (ground) (normal indication 28vdc not present) ?.....	t	u
t. Replace secondary ejector valve (A1-F18AC-410-300, WP032 00) and do step aq	-	-
u. Do substeps below:		
(1) Turn off electrical power (A1-F18AC-LMM-000).		
(2) Open door 13L (A1-F18AC-LMM-010).		
(3) Disconnect 52P-E059 from no. 3 relay panel assembly.		
(4) Does continuity exist from 22P-N014 pin 3 to 52P-E059 pin 76?.....	f	v
v. Do substeps below:		
(1) Open door 13R (A1-F18AC-LMM-010).		
(2) Disconnect 70P-F001B from Air Data Computer CP-1334/A.		
(3) Does continuity exist from 70P-F001B pin 73 to 52P-E059 pin 77?	f	w
w. Malfunction is caused by either bad wiring or relay 22K-E038 in no. 3 relay panel assembly or internal malfunction of Air Data Computer. Replace one of the items below:		
(1) No. 3 relay panel assembly (A1-F18AC-420-300, WP036 00) and do step aq.		
(2) Air Data Computer (A1-F18AC-560-300, WP003 00) and do step aq	-	-
x. Observe position indicator on system flow modulating pressure regulator. Is indicator closed or near closed?.....	y	af
y. Do substeps below:		
(1) Shut down APU (A1-F18AC-LMM-000).		
(2) Remove doors 27 and 36 (A1-F18AC-LMM-010).		
(3) Start APU and operate in ECS mode (A1-F18AC-LMM-000).		
(4) Inspect ducts between system flow modulating pressure regulator, avionics flow valve, and cabin flow valve. Are there any leaks or damage?	aa	z
z. Repair leak or replace damaged duct (A1-F18AC-410-300, WP003 00) and do step aq.	-	-
aa. Inspect condenser/reheater heat exchanger. Do leaks or damage exist?	ac	ab
ab. Replace condenser/reheater heat exchanger (A1-F18AC-410-300, WP039 00) and do step aq.	-	-
ac. Inspect water extractor. Do leaks or damage exist?	ae	ad

Table 1. Code 824 (Continued)

Procedure	No	Yes
ad. Replace water extractor (A1-F18AC-410-300, WP040 00) and do step aq	-	-
ae. Malfunction is caused by obstruction of one or both of the below:		
(1) Replace secondary heat exchanger (A1-F18AC-410-300, WP031 00).		
(2) Replace condenser/reheater heat exchanger (A1-F18AC-410-300, WP039 00) and do step aq.....	-	-
af. Do substeps below:		
(1) Remove door 42 (A1-F18AC-LMM-010).		
(2) Disconnect tube assembly from compressor protective temperature sensor and cap tube assembly.		
(3) Observe system flow modulating pressure regulator position indicator. Is position indicator closed or near closed?	ag	ah
ag. Replace compressor protective temperature sensor (A1-F18AC-410-300, WP038 00) and do step aq	-	-
ah. Do substeps below:		
(1) Connect tube assembly to compressor protective temperature sensor.		
(2) Disconnect tube assembly from turbine protective temperature sensor and cap tube assembly.		
(3) Observe system flow modulating pressure regulator position indicator. Is position indicator closed or near closed?	ai	aj
ai. Replace turbine protective temperature sensor (A1-F18AC-410-300, WP037 00) and do step aq	-	-
aj. Do substeps below:		
(1) Connect tube assembly to turbine protective temperature sensor.		
(2) On system flow modulating pressure regulator, disconnect tube assembly coming from turbine compressor protective temperature sensor and cap port at valve.		
(3) Observe system flow modulating pressure regulator position indicator. Is position indicator closed or near closed?	ak	al
ak. Isolate and repair tube assembly (A1-F18AC-PIM-000) to turbine protective temperature sensor and compressor protective temperature sensor and do step aq	-	-

Table 1. Code 824 (Continued)

Procedure	No	Yes
al. Do substeps below:		
(1) Shut down APU (A1-F18AC-LMM-000).		
(2) Disconnect 22P-D002A from ACS temperature/flow controller.		
(3) Does continuity exist from 22P-D002A pin 42 to pin 49?	am	ap
am. Do substeps below:		
(1) Disconnect 22P-R015B from system flow modulating pressure regulator (regulator).		
(2) Does continuity exist from 22L-R015B regulator receptacle J2 pin 2 to pin 4?	c	an
an. Do substeps below:		
(1) Remove ECS panel assembly (A1-F18AC-410-300, WP004 00).		
(2) Does continuity exist from 52J-J078 pin 29 to pin 35?	ao	f
ao. Replace ECS panel assembly (A1-F18AC-410-300, WP004 00) and do step aq.....	-	-
ap. Malfunction is caused by either bad flow channel in ACS temperature/flow controller or internal malfunction of system flow modulating pressure regulator. Replace one of the items below:		
(1) ACS temperature/flow controller (A1-F18AC-410-300, WP026 00) and do step ap.		
(2) System flow modulating pressure regulator (A1-F18AC-410-300, WP035 00) and do step aq.....	-	-
aq. If disconnected, removed, or opened during this procedure, make sure the items listed below are connected, installed, or closed:		
(1) 22P-N017		
(2) 52P-E059		
(3) 52P-C057F		
(4) 22P-D002A		
(5) 22P-R015A		
(6) 22P-R015B		
(7) 70P-F001B		

Table 1. Code 824 (Continued)

Procedure	No	Yes
(8) ECS panel assembly		
(9) Tube assembly to compressor protective temperature sensor		
(10) Tube assembly to turbine protective temperature sensor		
(11) 22P-N014		
(12) Door 10R		
(13) Door 129R		
(14) Door 34R		
(15) Door 10L		
(16) Door 13L		
(17) Door 27		
(18) Door 36		
(19) Door 39R		
(20) Door 42		
(21) Door 13R		
(22) ADC circuit breaker		
(23) ECS CONT circuit breaker	-	-

ORGANIZATIONAL MAINTENANCE

FAULT ISOLATION MANUAL

TROUBLESHOOTING PROCEDURE

Reference Material

Line Maintenance Procedures	A1-F18AC-LMM-000
Line Maintenance Access Doors	A1-F18AC-LMM-010
Environmental Control Systems	A1-F18AC-410-500
Cabin Cooling and Defog System	WP008 00
Windshield Anti-Ice and Rain Removal System	WP013 00

Alphabetical Index

Subject	Page No.
Table 1	2

Record of Applicable Technical Directives

None

Table 1. Code 825, Cabin Airflow High

Support Equipment Required

NOTE

Alternate item type designations or part numbers are listed in parentheses.

Part Number or Type Designation	Nomenclature
260-6XLP	Multimeter
(AN/USM-311)	
74D410141-1001	Test Set, ACS Pressure Indicator

Materials Required

None

NOTE

Cabin Cooling and Defog System Schematic (A1-F18AC-410-500, WP008 00) and Windshield Anti-Ice and Rain Removal System Schematic (A1-F18AC-410-500, WP013 00) may be used as an aid when doing this procedure.

For component locator, refer to A1-F18AC-410-500, WP008 00 and WP013 00.

Malfunction is caused by one of the items below:

ACS Temperature/Flow Controller
Aircraft Wiring
Cabin Flow Valve
Flow/Temperature Limiting Anti-Ice Modulating Valve
No. 3 Relay Panel Assembly

Procedure

No

Yes



To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use RX1 scale.

Table 1. Code 825, Cabin Airflow High (Continued)

Procedure	No	Yes
<p style="text-align: center;">NOTE</p> <p>The question used in logic tree "Does continuity exist" means to test for the items listed below:</p> <ol style="list-style-type: none"> 1. Pin to pin test per procedural step. 2. Shorts to ground. 3. Shorts between surrounding pins on connectors. 4. Shorts between shield and conductors. 5. Shield continuity. <p>When testing for resistance, also test for shorts to ground.</p>		
a. Do substeps below:		
(1) Make sure electrical power is off (A1-F18AC-LMM-000).		
(2) Open door 10R (A1-F18AC-LMM-010).		
(3) On 161353 THRU 161359, on no. 2 circuit breaker panel assembly, open ECS CONT (zone D13) circuit breaker, or on 161360 AND UP, on no. 4 circuit breaker panel assembly, open ECS CONT (zone C6) circuit breaker.		
(4) Disconnect 22P-D002A from ACS temperature/flow controller.		
(5) Does 69 to 90 ohms exist from 22P-D002A pin 26 to pin 41?	b	g
b. Do substeps below:		
(1) Remove door 27 (A1-F18AC-LMM-010).		
(2) Disconnect 22P-R006 from cabin flow valve.		
(3) Does 69 to 90 ohms exist from 22L-R006 receptacle pin 3 to pin 1?	c	d
c. Replace cabin flow valve (A1-F18AC-410-300, WP044 00) and do step m	-	-
d. Do substeps below:		
(1) Disconnect 52P-E059 from no. 3 relay panel assembly.		
(2) Does continuity exist from 52J-E059 pin 25 to pin 46?	e	f
e. Isolate between no. 3 relay panel assembly wiring and relay 22K-E145 (A1-F18AC-420-300, WP036 00) and do step m	-	-

Table 1. Code 825, Cabin Airflow High (Continued)

Procedure	No	Yes
f. Isolate defective aircraft wiring (A1-F18AC()-WDM-000) and do step m	-	-
g. Do substeps below:		
(1) Remove door 27 (A1-F18AC-LMM-010).		
(2) Connect ACS pressure indicator test set (0 to 30 psig) to ECS test port no. (VIII).		
(3) On 161353 THRU 161359, on no. 2 circuit breaker panel assembly, close ECS CONT (zone D13) circuit breaker, or on 161360 AND UP, on no. 4 circuit breaker panel assembly, close ECS CONT (zone C6) circuit breaker.		
(4) Connect 22P-D002A to ACS temperature/flow controller.		
(5) Start APU and operate in ECS mode (A1-F18AC-LMM-000).		
(6) Test muscle pressure from flow/temperature limiting anti-ice modulating valve (valve) at ECS test port no. (VIII) as listed below:		
On aircraft with valve P/N 979452-3-1, muscle pressure is 15 ±1 psig		
On aircraft with valve P/N 979452-5-2, muscle pressure is 16 ±0.5 psig		
On aircraft with valve P/N 979452-7-1, muscle pressure is 16 ±0.5 psig		
Is muscle pressure correct?	h	k
h. Do substeps below:		
(1) Shut down APU (A1-F18AC-LMM-000).		
(2) Disconnect ACS pressure indicator test set from ECS test port no. (VIII) and cap ECS test port no. (VIII).		
(3) In LMG wheelwell, connect ACS pressure indicator test set (0 to 30 psig) to ECS test port no. (III).		

Table 1. Code 825, Cabin Airflow High (Continued)

Procedure	No	Yes
(4) Test muscle pressure from flow/temperature limiting anti-ice modulating valve (valve) at ECS test port no. (III) as listed below: On aircraft with valve P/N 979452-3-1, muscle pressure is 15 ±1 psig On aircraft with valve P/N 979452-5-2, muscle pressure is 16 ±0.5 psig On aircraft with valve P/N 979452-7-1, muscle pressure is 16 ±0.5 psig Is muscle pressure correct?		
i. Replace flow/temperature limiting anti-ice modulating valve (A1-F18AC-410-300, WP110 00) and do step m	-	-
j. Isolate and repair muscle pressure tube leakage (A1-F18AC-PIM-000) and do step m.....	-	-
k. Do substeps below: (1) On ECS panel assembly, set CABIN PRESS switch to RAM/DUMP. (2) Is cabin flow control valve closed?		
l. Replace ACS temperature/flow controller (A1-F18AC-410-300, WP026 00) and do step m.	c	l
m. If disconnected, removed, set, or opened during this procedure, make sure the items listed below are connected, installed, reset, or closed: (1) Shut down APU (2) 22P-D002A (3) 22P-R006 (4) 52P-E059 (5) Cap ECS test ports no. (III) or (VIII) (6) Disconnect ACS pressure indicator test set (7) ECS panel assembly CABIN PRESS switch to NORM (8) Door 27	-	-

Table 1. Code 825, Cabin Airflow High (Continued)

Procedure	No	Yes
(9) Door 10R		
(10) ECS CONT circuit breaker	-	-

ORGANIZATIONAL MAINTENANCE

FAULT ISOLATION MANUAL

TROUBLESHOOTING PROCEDURE

Reference Material

Line Maintenance Procedures	A1-F18AC-LMM-000
Line Maintenance Access Doors	A1-F18AC-LMM-010
Environmental Control Systems	A1-F18AC-410-500
Cabin Cooling and Defog System	WP008 00

Alphabetical Index

Subject	Page No.
Table 1	1

Record of Applicable Technical Directives

None

Table 1. Code 825, Cabin Air No/Low Flow

Support Equipment Required	
NOTE	
Alternate item type designations or part numbers are listed in parentheses.	
Part Number or Type Designation	Nomenclature
260-6XLP	Multimeter
(AN/USM-311)	

Table 1. Code 825, Cabin Air No/Low Flow (Continued)


<p style="text-align: center;">Materials Required</p> <p style="text-align: center;">None</p> <p style="text-align: center;">NOTE</p> <p>Cabin Cooling and Defog System Schematic (A1-F18AC-410-500, WP008 00) may be used as an aid when doing this procedure.</p> <p>For component locator, refer to A1-F18AC-410-500, WP008 00.</p> <p>Malfunction is caused by one of the items below:</p> <p>ACS Temperature/Flow Controller Aircraft Wiring Avionics Flow Valve Avionics Ram Air Servo Avionics Ram Air Valve Cabin Flow Valve No. 3 Relay Panel Assembly</p>		
Procedure	No	Yes
<p style="text-align: center;"></p> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use RX1 scale.</p> <p style="text-align: center;">NOTE</p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"> 1. Pin to pin test per procedural step. 2. Shorts to ground. 3. Shorts between surrounding pins on connectors. 4. Shorts between shield and conductors. 5. Shield continuity. <p>When testing for resistance, also test for shorts to ground.</p> <p>a. Do substeps below:</p> <ol style="list-style-type: none"> (1) Make sure electrical power is off (A1-F18AC-LMM-000). (2) Open door 10R (A1-F18AC-LMM-010). 		

Table 1. Code 825, Cabin Air No/Low Flow (Continued)

Procedure	No	Yes
(3) Disconnect 22P-D002A from ACS temperature/flow controller.		
(4) On 161353 THRU 161359, on no. 2 circuit breaker panel assembly, open ECS CONT (zone D13) circuit breaker, or on 161360 AND UP, on no. 4 circuit breaker panel assembly, open ECS CONT (zone C6) circuit breaker.		
(5) Does 69 to 90 ohms exist from 22P-D002A pin 26 to pin 41?	b	g
b. Do substeps below:		
(1) Remove door 27 (A1-F18AC-LMM-010).		
(2) Disconnect 22P-R006 from cabin flow valve.		
(3) Does 69 to 90 ohms exist from 22L-R006 receptacle pin 1 to pin 3?	c	d
c. Replace cabin flow valve (A1-F18AC-410-300, WP044 00) and do step t	-	-
d. Do substeps below:		
(1) Disconnect 52P-E059 from no. 3 relay panel assembly.		
(2) Does continuity exist from 52J-E059 pin 25 to pin 46?	e	f
e. Isolate between no. 3 relay panel assembly wiring and relay 22K-E145 (A1-F18AC-420-300, WP036 00) and do step t	-	-
f. Isolate defective aircraft wiring (A1-F18A()-WDM-000) and do step t	-	-
g. Do substeps below:		
(1) Remove door 27 (A1-F18AC-LMM-010).		
(2) Is cabin flow valve position indicator full open?	c	h
h. Do substeps below:		
(1) On 161353 THRU 161359, on no. 2 circuit breaker panel assembly, close ECS CONT (zone D13) circuit breaker, or on 161360 AND UP, on no. 4 circuit breaker panel assembly, close ECS CONT (zone C6) circuit breaker.		
(2) Connect 22P-D002A to ACS temperature/flow controller.		
(3) Start APU and operate in ECS mode (A1-F18AC-LMM-000).		

Table 1. Code 825, Cabin Air No/Low Flow (Continued)

Procedure	No	Yes
(4) Is cabin flow valve position indicator full open?.....	i	j
i. Replace ACS temperature/flow controller (A1-F18AC-410-300, WP026 00) and do step t.....	-	-
j. Is avionics flow valve position indicator full open?.....	n	k
k. Do substeps below:		
(1) Monitor sensing lines to avionics flow valve.		
(2) Are sensing lines leaking?.....	l	m
l. Replace avionics flow valve (A1-F18AC-410-300, WP058 00) and do step t.....	-	-
m. Isolate and repair line leak to avionics flow valve (A1-F18AC-PIM-000) and do step t.....	-	-
n. Is avionics ram air valve open?.....	o	p
o. Isolate and repair leaking or damaged cabin distribution duct (A1-F18AC-PIM-000) and do step t.....	-	-
p. Are sensing lines to avionics ram air valve and avionics ram air servo leaking?.....	q	o
q. Do substeps below:		
(1) Disconnect sensing line from avionics ram air valve.		
(2) Is there air flow to avionics ram air valve?.....	r	s
r. Replace avionics ram air servo (A1-F18AC-410-300, WP064 00) and do step t.....	-	-
s. Replace avionics ram air valve (A1-F18AC-410-300, WP062 00) and do step t.....	-	-
t. If disconnected, removed, or opened during this procedure, make sure the items listed below are connected, installed, or closed:		
(1) Shut down APU		
(2) Sensing line to avionics ram air valve		
(3) 22P-R006		
(4) 52P-E059		

Table 1. Code 825, Cabin Air No/Low Flow (Continued)

Procedure	No	Yes
(5) 22P-D002A		
(6) Door 10R		
(7) Door 27		
(8) ECS CONT circuit breaker	-	-

ORGANIZATIONAL MAINTENANCE

FAULT ISOLATION MANUAL

TROUBLESHOOTING PROCEDURE

Reference Material

Line Maintenance Procedures	A1-F18AC-LMM-000
Line Maintenance Access Doors.....	A1-F18AC-LMM-010
Environmental Control Systems.....	A1-F18AC-410-500
Cabin Cooling and Defog System.....	WP008 00
Windshield Anti-Ice and Rain Removal System	WP013 00
Fault Isolation Manual.....	A1-F18AC-FIM-000
Troubleshooting Procedure.....	WP056 00

Alphabetical Index

Subject	Page No.
Table 1	2

Record of Applicable Technical Directives

None

Table 1. Code 825, Cyclic Cabin Flow**Support Equipment Required****NOTE**

Alternate item type designations or part numbers are listed in parentheses.

Part Number or Type Designation	Nomenclature
260-6XLP	Multimeter
(AN/USM-311)	
74D410141-1001	Test Set, ACS Pressure Indicator

Materials Required

None

NOTE

Cabin Cooling and Defog System Schematic (A1-F18AC-410-500, WP008 00) and Windshield Anti-Ice and Rain Removal System Schematic (A1-F18AC-410-500, WP013 00) may be used as an aid when doing this procedure.

For component locator, refer to A1-F18AC-410-500, WP008 00 and WP013 00.

Malfunction is caused by one of the items below:

ACS Temperature/Flow Controller
Aircraft Wiring
Cabin Airflow/Temperature Sensor
Cabin Flow Valve
Flow/Temperature Limiting Anti-Ice Modulating Valve
No. 3 Relay Panel Assembly

Procedure	No	Yes
------------------	-----------	------------



To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use RX1 scale.

Table 1. Code 825, Cyclic Cabin Flow (Continued)

Procedure	No	Yes
<p style="text-align: center;">NOTE</p> <p>The question used in logic tree "Does continuity exist" means to test for the items listed below:</p> <ol style="list-style-type: none"> 1. Pin to pin test per procedural step. 2. Shorts to ground. 3. Shorts between surrounding pins on connectors. 4. Shorts between shield and conductors. 5. Shield continuity. <p>When testing for resistance, also test for shorts to ground.</p>		
a. Do substeps below:		
(1) Make sure electrical power is off (A1-F18AC-LMM-000).		
(2) Open door 10R (A1-F18AC-LMM-010).		
(3) On 161353 THRU 161359, on no. 2 circuit breaker panel assembly open ECS CONT (zone D13) circuit breaker, or on 161360 AND UP, on no. 4 circuit breaker panel assembly, open ECS CONT (zone C6) circuit breaker.		
(4) Disconnect 22P-D002A from ACS temperature/flow controller.		
(5) Does 69 to 90 ohms exist from 22P-D002A pin 26 to pin 41?	b	g
b. Do substeps below:		
(1) Remove door 27 (A1-F18AC-LMM-010).		
(2) Disconnect 22P-R006 from cabin flow valve.		
(3) Does 69 to 90 ohms exist from 22L-R006 receptacle pin 1 to pin 3?.....	c	d
c. Replace cabin flow valve (A1-F18AC-410-300, WP044 00) and do step m	-	-
d. Do substeps below:		
(1) Disconnect 52P-E059 from no. 3 relay panel assembly.		
(2) Does continuity exist from 52J-E059 pin 25 to pin 46?.....	e	f
e. Isolate between no. 3 relay panel assembly wiring and relay 22K-E145 (A1-F18AC-420-300, WP036 00) and do step m.....	-	-

Table 1. Code 825, Cyclic Cabin Flow (Continued)

Procedure	No	Yes
f. Isolate defective aircraft wiring (A1-F18A()-WDM-000) and do step m	-	-
g. Do substeps below:		
(1) Disconnect 22P-D002B from ACS temperature/flow controller.		
(2) Do the resistance tests below:		
22P-D002B pin 42 to pin 43 (value per temperature/resistance chart 1, WP056 00)		
22P-D002B pin 50 to pin 55 (value per temperature/resistance chart 2, WP056 00)		
22P-D002B pin 50 to pin 54 (value per temperature/resistance chart 3, WP056 00)		
22P-D002B pin 49 to pin 53 (35 to 50 ohms)		
Are resistance values correct?	h	j
h. Do substeps below:		
(1) Disconnect 22P-E003 from cabin airflow/temperature sensor (nose wheelwell).		
(2) Do the resistance tests below:		
22A-E003 sensor receptacle pin 2 to pin 10 (value per temperature/resistance chart 1, WP056 00)		
22A-E003 sensor receptacle pin 3 to pin 4 (value per temperature/resistance chart 2, WP056 00)		
22A-E003 sensor receptacle pin 3 to pin 11 (value per temperature/resistance chart 3, WP056 00)		
22A-E003 sensor receptacle pin 5 to pin 7 (35 to 50 ohms)		
Are resistance values correct?	i	f
i. Replace cabin airflow/temperature sensor (A1-F18AC-410-300, WP046 00) and do step m	-	-
j. Do substeps below:		
(1) On 161353 THRU 161359, on no. 2 circuit breaker panel assembly, close ECS CONT (zone D13) circuit breaker, or on 161360 AND UP, on no. 4 circuit breaker panel assembly, close ECS CONT (zone C6) circuit breaker.		
(2) Remove door 27 (A1-F18AC-LMM-010).		
(3) Connect ACS pressure indicator test set (0 to 30 psig) to ECS test port no. (VIII).		

Table 1. Code 825, Cyclic Cabin Flow (Continued)

Procedure	No	Yes
(4) Connect 22P-D002A and 22P-D002B to ACS temperature/flow controller.		
(5) Start APU and operate in ECS mode (A1-F18AC-LMM-000).		
(6) Test muscle pressure from flow/temperature limiting anti-ice modulating valve (valve) at ECS test port no. (VIII) as listed below:		
On aircraft with valve P/N 979452-3-1 muscle pressure is 15 ±1 psig		
On aircraft with valve P/N 979452-5-2 muscle pressure is 16 ±0.5 psig		
On aircraft with valve P/N 979452-7-1 muscle pressure is 16 ±0.5 psig		
Is muscle pressure correct?	k	l
k. Replace flow/temperature limiting anti-ice modulating valve (A1-F18AC-410-300, WP110 00) and do step m	-	-
l. Replace ACS temperature/flow controller (A1-F18AC-410-300, WP026 00) and do step m	-	-
m. If disconnected, removed, or opened during this procedure, make sure the items listed below are connected, installed, or closed:		
(1) Shut down APU		
(2) 22P-D002A		
(3) 22P-E003		
(4) ECS test port no. (VIII)		
(5) 22P-R006		
(6) 22P-D002B		
(7) 52P-E059		
(8) Door 27		
(9) Door 10R		
(10) ECS CONT circuit breaker	-	-

ORGANIZATIONAL MAINTENANCE

FAULT ISOLATION MANUAL

TROUBLESHOOTING PROCEDURE

Reference Material

Fault Isolation Manual.....	A1-F18AC-FIM-000
Troubleshooting Procedure.....	WP056 00
Line Maintenance Procedures.....	A1-F18AC-LMM-000
Line Maintenance Access Doors.....	A1-F18AC-LMM-010
Environmental Control Systems.....	A1-F18AC-410-500
Cabin Cooling and Defog System.....	WP008 00
Avionics Cooling System.....	WP009 00

Alphabetical Index

Subject	Page No.
Table 1.....	2

Record of Applicable Technical Directives

None

Table 1. Code 827, Cabin Air Temperature High

Support Equipment Required

NOTE

Alternate item type designations or part numbers are listed in parentheses.

Part Number or Type Designation	Nomenclature
260-6XLP (AN/USM-311)	Multimeter

Materials Required

None

NOTE

Avionics Cooling System Schematic - Except Cockpit (A1-F18AC-410-500, WP009 00) and Cabin Cooling and Defog System Schematic (A1-F18AC-410-500, WP008 00) may be used as an aid when doing this procedure.

For component locator, refer to A1-F18AC-410-500, WP008 00.

Malfunction is caused by one of the items below:

ACS Temperature/Flow Controller
Aircraft Wiring
Avionics Air Flow/Temperature Sensor
Cabin Add Heat Valve
Cabin Airflow/Temperature Sensor
No. 3 Relay Panel Assembly

Procedure

No

Yes



To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale.

Pin to pin tests that do not go through switches/relay contacts may use RX1 scale.

Table 1. Code 827, Cabin Air Temperature High (Continued)

Procedure	No	Yes
<p style="text-align: center;">NOTE</p> <p>The question used in logic tree "Does continuity exist" means to test for the items listed below:</p> <ol style="list-style-type: none"> 1. Pin to pin test per procedural step. 2. Shorts to ground. 3. Shorts between surrounding pins on connectors. 4. Shorts between shield and conductors. 5. Shield continuity. <p>When testing for resistance, also test for shorts to ground.</p>		
a. Do substeps below:		
(1) Make sure electrical power is off (A1-F18AC-LMM-000).		
(2) In nose wheelwell, check cabin add heat valve position indicator.		
(3) Is valve position indicator in OPEN position?	c	b
b. Replace cabin add heat valve (A1-F18AC-410-300, WP045 00) and do step q.....	-	-
c. Do substeps below:		
(1) Open door 10R (A1-F18AC-LMM-010).		
(2) Disconnect 22P-D002A from ACS temperature/flow controller.		
(3) Does 69 to 90 ohms exist from 22P-D002A pin 11 to pin 26?	d	h
d. Do substeps below:		
(1) Disconnect 22P-E007 from cabin add heat valve (valve) (nose wheelwell).		
(2) Does 69 to 90 ohms exist from 22L-E007 valve receptacle pin 1 to pin 3?.....	b	e
e. Do substeps below:		
(1) Open door 13L (A1-F18AC-LMM-010).		
(2) Disconnect 52P-E059 from no. 3 relay panel assembly.		
(3) Does continuity exist from 52J-E059 pin 58 to pin 120?	f	g
f. Isolate between no. 3 relay panel assembly wiring and relay 22K-E145 (A1-F18AC-420-300, WP036 00) and do step q.	-	-

Table 1. Code 827, Cabin Air Temperature High (Continued)

Procedure	No	Yes
g. Isolate defective aircraft wiring (A1-F18A()-WDM-000) and do step q.....	-	-
h. Do substeps below:		
(1) Connect 22P-D002A to ACS temperature/flow controller.		
(2) Start APU and operate in ECS mode (A1-F18AC-LMM-000).		
(3) On ECS panel assembly, set ECS mode switch to MAN.		
(4) Does cabin delivery air temperature change?	i	n
i. Do substeps below:		
(1) Check position indicator on cabin add heat valve.		
(2) Is valve position indicator in OPEN position?	j	m
j. Do substeps below:		
(1) Shut down APU (A1-F18AC-LMM-000).		
(2) Disconnect 22P-D002B from ACS temperature/flow controller.		
(3) Do the resistance tests below:		
22P-D002B pin 42 to pin 43 (value per temperature/resistance chart 1, WP056 00)		
22P-D002B pin 50 to pin 55 (value per temperature/resistance chart 2, WP056 00)		
22P-D002B pin 50 to pin 54 (value per temperature/resistance chart 3, WP056 00)		
22P-D002B pin 49 to pin 53 (35 to 50 ohms)		
Are resistance values correct?	k	m
k. Do substeps below:		
(1) Disconnect 22P-E003 from cabin airflow/temperature sensor (sensor) (nose wheel-well).		

Table 1. Code 827, Cabin Air Temperature High (Continued)

Procedure	No	Yes
(2) Do the resistance tests below:		
22A-E003 sensor receptacle pin 2 to pin 10 (value per temperature/resistance chart 1, WP056 00)		
22A-E003 sensor receptacle pin 3 to pin 4 (value per temperature/resistance chart 2, WP056 00)		
22A-E003 sensor receptacle pin 3 to pin 11 (value per temperature/resistance chart 3, WP056 00)		
22A-E003 sensor receptacle pin 5 to pin 7 (35 to 50 ohms)		
Are resistance values correct?	1	g
l. Replace cabin airflow/temperature sensor (A1-F18AC-410-300, WP046 00) and do step q	-	-
m. Replace ACS temperature/flow controller (A1-F18AC-410-300, WP026 00) and do step q	-	-
n. Do substeps below:		
(1) Shut down APU (A1-F18AC-LMM-000).		
(2) Disconnect 22P-D002B from ACS temperature/flow controller.		
(3) Do the resistance tests below:		
22P-D002B pin 12 to pin 13 (value per temperature/resistance chart 1, WP056 00)		
22P-D002B pin 2 to pin 7 (value per temperature/resistance chart 4, WP056 00)		
22P-D002B pin 3 to pin 7 (value per temperature/resistance chart 5, WP056 00)		
22P-D002B pin 1 to pin 6 (35 to 50 ohms)		
Are resistance values correct?	o	m
o. Do substeps below:		
(1) Remove door 33 (A1-F18AC-LMM-010).		
(2) Disconnect 22P-E004 from avionics air flow/temperature sensor (sensor).		

Table 1. Code 827, Cabin Air Temperature High (Continued)

Procedure	No	Yes
(3) Do the resistance tests below:		
22A-E004 sensor receptacle pin 2 to pin 10 (value per/temperature resistance chart 1, WP056 00)		
22A-E004 sensor receptacle pin 3 to pin 11 (value per/temperature resistance chart 4, WP056 00)		
22A-E004 sensor receptacle pin 3 to pin 4 (value per/temperature resistance chart 5, WP056 00)		
22A-E004 sensor receptacle pin 5 to pin 7 (35 to 50 ohms)		
Are resistance values correct?	p	g
p. Replace avionics air flow/temperature sensor (A1-F18AC-410-300, WP060 00) and do step q.....	-	-
q. If disconnected, removed, or opened during this procedure, make sure the items listed below are connected, installed, or closed:		
(1) Shut down APU		
(2) 22P-D002A		
(3) 22P-D002B		
(4) 22P-E003		
(5) 22P-E004		
(6) 22P-E007		
(7) 52P-E059		
(8) Door 33		
(9) Door 13L		
(10) Door 10R.....	-	-

ORGANIZATIONAL MAINTENANCE

FAULT ISOLATION MANUAL

TROUBLESHOOTING PROCEDURE

Reference Material

Line Maintenance Procedures	A1-F18AC-LMM-000
Line Maintenance Access Doors.....	A1-F18AC-LMM-010
Environmental Control Systems.....	A1-F18AC-410-500
Cabin Cooling and Defog System.....	WP008 00
Fault Isolation Manual.....	A1-F18AC-FIM-000
Troubleshooting Procedure.....	WP056 00

Alphabetical Index

Subject	Page No.
Table 1.....	1

Record of Applicable Technical Directives

None

Table 1. Code 827, Cabin Air Too Cold

Support Equipment Required	
NOTE	
Alternate item type designations or part numbers are listed in parentheses.	
Part Number or Type Designation	Nomenclature
260-6XLP	Multimeter
(AN/USM-311)	

Table 1. Code 827, Cabin Air Too Cold (Continued)


<p align="center">Materials Required</p> <p align="center">None</p> <p align="center">NOTE</p> <p>Cabin Cooling and Defog System Schematic (A1-F18AC-410-500, WP008 00) may be used as an aid when doing this procedure.</p> <p>For component locator, refer to A1-F18AC-410-500, WP008 00.</p> <p>Malfunction is caused by one of the items below:</p> <p>Aircraft Wiring Cabin Add Heat Valve Cabin Airflow/Temperature Sensor Cabin Air Overtemperature Sensor ECS Panel Assembly No. 3 Relay Panel Assembly Warm Air Temperature Control Valve Warm Air Temperature Sensor</p>		
Procedure	No	Yes
<p align="center"></p> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use RX1 scale.</p> <p align="center">NOTE</p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"> 1. Pin to pin test per procedural step. 2. Shorts to ground. 3. Shorts between surrounding pins on connectors. 4. Shorts between shield and conductors. 5. Shield continuity. <p>When testing for resistance, also test for shorts to ground.</p> <p>a. Do substeps below:</p> <ol style="list-style-type: none"> (1) Make sure electrical power is off (A1-F18AC-LMM-000). (2) Open door 10R (A1-F18AC-LMM-010). 		

Table 1. Code 827, Cabin Air Too Cold (Continued)

Procedure	No	Yes
(3) Disconnect 22P-D002A from ACS temperature/flow controller.		
(4) Does 69 to 90 ohms exist from 22P-D002A pin 11 to pin 26?	b	g
b. Do substeps below:		
(1) Disconnect 22P-E007 from cabin add heat valve (nose wheelwell).		
(2) Does 69 to 90 ohms exist from 22L-E007 receptacle pin 1 to pin 3?	c	d
c. Replace cabin add heat valve (A1-F18AC-410-300, WP045 00) and do step v.....	-	-
d. Do substeps below:		
(1) Open door 13L (A1-F18AC-LMM-010).		
(2) Disconnect 52P-E059 from no. 3 relay panel assembly.		
(3) Does continuity exist from 52P-E059 pin 58 to pin 120?	e	f
e. Isolate between no. 3 relay panel assembly wiring and 22K-E145 (A1-F18AC-420-300, WP036 00) and do step v.....	-	-
f. Isolate defective aircraft wiring (A1-F18A()-WDM-000) and do step v.....	-	-
g. Do substeps below:		
(1) Disconnect 22P-D002B from ACS temperature/flow controller.		
(2) Do the resistance tests below:		
22P-D002B pin 42 to pin 43 (value per temperature/resistance chart 1, WP056 00)		
22P-D002B pin 50 to pin 55 (value per temperature/resistance chart 2, WP056 00)		
22P-D002B pin 50 to pin 54 (value per temperature/resistance chart 3, WP056 00)		
22P-D002B pin 49 to pin 53 (35 to 50 ohms)		
(3) Are resistance values correct?	h	j
h. Do substeps below:		
(1) Disconnect 22P-E003 from cabin airflow/temperature sensor (nose wheelwell).		

Table 1. Code 827, Cabin Air Too Cold (Continued)

Procedure	No	Yes
(2) Do the resistance tests below:		
22A-E003 receptacle pin 2 to pin 10 (value per temperature/resistance chart 1, WP056 00)		
22A-E003 receptacle pin 3 to pin 4 (value per temperature/resistance chart 2, WP056 00)		
22A-E003 receptacle pin 3 to pin 11 (value per temperature/resistance chart 3, WP056 00)		
22A-E003 receptacle pin 5 to pin 7 (35 to 50 ohms)		
(3) Are resistance values correct?	i	f
i. Replace cabin airflow/temperature sensor (A1-F18AC-410-300, WP046 00) and do step v.....	-	-
j. Do the resistance tests below:		
22P-D002A pin 30 to pin 44 (400-600 ohms)		
22P-D002A pin 50 to pin 54 (900-1100 ohms)		
22P-D002A pin 30 to pin 37 (275-475 ohms)		
22P-D002A pin 37 to pin 44 (275-475 ohms)		
22P-D002A pin 43 to pin 54 (400-600 ohms)		
22P-D002A pin 43 to pin 50 (400-600 ohms)		
Are resistance values correct?	k	m
k. Do substeps below:		
(1) Remove ECS panel assembly (A1-F18AC-410-300, WP004 00).		
(2) Do resistance tests below:		
52J-J078 pin 45 to pin 50 (400-600 ohms)		
52J-J078 pin 15 to pin 31 (900-1100 ohms)		
52J-J078 pin 38 to pin 50 (275-475 ohms)		
52J-J078 pin 38 to pin 45 (275-475 ohms)		
52J-J078 pin 15 to pin 23 (400-600 ohms)		
52J-J078 pin 23 to pin 31 (400-600 ohms)		
(3) Are resistance values correct?	l	f
l. Replace ECS panel assembly (A1-F18AC-410-300, WP004 00) and do step v.....	-	-
m. Do substeps below:		
(1) Connect 22P-D002A and 22P-D002B to ACS temperature/flow controller.		
(2) Start APU and operate in ECS mode (A1-F18AC-LMM-000).		

Table 1. Code 827, Cabin Air Too Cold (Continued)

Procedure	No	Yes
(3) On ECS panel assembly, set SUIT/CABIN TEMP control to full HOT.		
(4) Is cabin add heat valve position indicator in OPEN position?.....	n	r
n. Do substeps below:		
(1) Disconnect and cap sensing line at cabin air overtemperature sensor.		
(2) Is cabin add heat valve position indicator in OPEN position?.....	p	o
o. Replace cabin air overtemperature sensor (A1-F18AC-410-300, WP047 00) and do step v....	-	-
p. Do substeps below:		
(1) Inspect sensing line and muscle pressure line to cabin add heat valve.		
(2) Is line leaking?.....	c	q
q. Isolate and repair leaking line (A1-F18AC-PIM-000) and do step v.....	-	-
r. Do substeps below:		
(1) Remove doors 34R and 27 (A1-F18AC-LMM-010).		
(2) Disconnect and cap sensing line at warm air temperature sensor.		
(3) Is warm air temperature control valve open (door 34R)?.....	t	s
s. Replace warm air temperature sensor (A1-F18AC-410-300, WP108 00) and do step v.....	-	-
t. Is sensing line to warm air temperature control valve leaking?.....	u	q
u. Replace warm air temperature control valve (A1-F18AC-410-300, WP107 00) and do step v.....	-	-
v. If disconnected, removed, or opened during this procedure, make sure the items listed below are connected, installed, or closed:		
(1) Shut down APU		
(2) Sensing line at cabin air overtemperature sensor		
(3) Sensing line at warm air temperature sensor		
(4) ECS panel assembly		

Table 1. Code 827, Cabin Air Too Cold (Continued)

Procedure	No	Yes
(5) 22P-D002A		
(6) 22P-E007		
(7) 22P-D002B		
(8) 22P-E003		
(9) 52P-E059		
(10) Door 10R		
(11) Door 34R		
(12) Door 13L		
(13) Door 27	-	-

ORGANIZATIONAL MAINTENANCE

FAULT ISOLATION MANUAL

TROUBLESHOOTING PROCEDURE

This WP supersedes WP082 00, dated 15 December 1987.

Reference Material

Line Maintenance Procedures	A1-F18AC-LMM-000
Line Maintenance Access Doors.....	A1-F18AC-LMM-010
Environmental Control Systems.....	A1-F18AC-410-500
Component Locator.....	WP004 00

Alphabetical Index

Subject	Page No.
Table 1.....	1

Record of Applicable Technical Directives

None

Table 1. Code 831, Bleed Air Leak or Bleed Air Leak Detection Fail

Support Equipment Required	
NOTE	
Alternate item type designations or part numbers are listed in parentheses.	
Part Number or Type Designation	Nomenclature
77AN (260-6XLP)	Multimeter

Table 1. Code 831, Bleed Air Leak or Bleed Air Leak Detection Fail (Continued)


Materials Required		
None		
NOTE		
Bleed Air Leak Detection System Schematic (A1-F18AC-410-500, WP006 00) may be used as an aid when doing this procedure.		
For component locator, refer to A1-F18AC-410-500, WP004 00.		
Malfunction is caused by one of the items below:		
Aft Dorsal Duct Sensing Element (24U-P007) Aft Dorsal Duct Sensing Element (24U-T008) Aircraft Wiring Bleed Air Leak Bleed Air Leak Detection Warning System Control Unit Fwd Dorsal Duct Sensing Element (24U-P005) Fwd Dorsal Duct Sensing Element (24U-R004) Keel Ducts Sensing Element (24U-P003) L Eng Duct Sensing Element (24U-S009) L Fwd Ducts Sensing Element (24U-M002) R Eng Duct Sensing Element (24U-T010) R Fwd Ducts Sensing Element (24U-N006) R Fwd Ducts Sensing Element (24U-N021) Signal Data Computer CP-1726/ASQ-194 Signal Data Converter CV-3493/ASM-612		
Procedure	No	Yes
<div style="text-align: center;"></div> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use RX1 scale.</p> <p>NOTE</p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"> 1. Pin to pin test per procedural step. 2. Shorts to ground. 3. Shorts between surrounding pins on connectors. 4. Shorts between shield and conductors. 5. Shield continuity. 		

Table 1. Code 831, Bleed Air Leak or Bleed Air Leak Detection Fail (Continued)

Procedure	No	Yes
a. Do substeps below:		
(1) Open door 46L (A1-F18AC-LMM-010).		
(2) On bleed air leak detection warning system control unit, is there a latched indicator?.	b	i
b. Do substeps below:		
(1) Make sure electrical power is off (A1-F18AC-LMM-000).		
(2) On F/A-18A AND F/A-18B, remove door 32R (A1-F18AC-LMM-010).		
(3) On F/A-18C AND F/A-18D, open door 14R (A1-F18AC-LMM-010).		
(4) On F/A-18A AND F/A-18B, disconnect 85P-N002C from Signal Data Converter CV-3493/ASM-612.		
(5) On F/A-18C AND F/A-18D, disconnect 85P-F042D from Signal Data Computer CP-1726/ASQ-194.		
(6) On F/A-18A AND F/A-18B, does continuity exist from 85P-N002C pin 58 to aircraft ground?	c	f
(7) On F/A-18C AND F/A-18D, does continuity exist from 85P-F042D pin 109 to aircraft ground?	c	f
c. Do substeps below:		
(1) Disconnect 24P-P011 from bleed air leak detection warning system control unit.		
(2) On F/A-18A AND F/A-18B, does continuity exist from:		
24P-P011 pin 53 to 85P-N002C pin 58		
24P-P011 pin 55 to aircraft ground?	d	e
(3) On F/A-18C AND F/A-18D, does continuity exist from:		
24P-P011 pin 53 to 85P-F042D pin 109		
24P-P011 pin 55 to aircraft ground?	d	e
d. Isolate defective aircraft wiring (A1-F18A()-WDM-000) and do step o.....	-	-
e. Replace bleed air leak detection warning system control unit (A1-F18AC-410-300, WP015 00) and do step o.....	-	-
f. Do substeps below:		
(1) Apply electrical power (A1-F18AC-LMM-000).		

Table 1. Code 831, Bleed Air Leak or Bleed Air Leak Detection Fail (Continued)

Procedure	No	Yes																
(2) On F/A-18A AND F/A-18B, does continuity exist from 85P-N002C pin 58 to aircraft ground?	e	g																
(3) On F/A-18C AND F/A-18D, does continuity exist from 85P-F042D pin 109 to aircraft ground?	e	h																
g. On F/A-18A AND F/A-18B, replace Signal Data Converter CV-3493/ASM-612 (A1-F18AC-580-300, WP003 00) and do step o	-	-																
h. On F/A-18C AND F/A-18D, replace Signal Data Computer CP-1726/ASQ-194 (A1-F18AE-580-300, WP003 00) and do step o	-	-																
i. Do substeps below:																		
(1) Remove or open door(s) that latch indicator indicates below (A1-F18AC-LMM-010):																		
<table><tr><th><u>Latched Indication</u></th><th><u>Doors</u></th></tr><tr><td>L ENG DUCT</td><td>68L</td></tr><tr><td>R ENG DUCT</td><td>68R</td></tr><tr><td>R FWD DUCTS</td><td>32R, 34R</td></tr><tr><td>FWD DORSAL DUCT</td><td>31, 40, 43, 49</td></tr><tr><td>AFT DORSAL DUCT</td><td>62, EBB, EBC</td></tr><tr><td>L FWD DUCTS</td><td>32L, 34L, 37L, 118L</td></tr><tr><td>KEEL DUCTS</td><td>27, 36, 42</td></tr></table>	<u>Latched Indication</u>	<u>Doors</u>	L ENG DUCT	68L	R ENG DUCT	68R	R FWD DUCTS	32R, 34R	FWD DORSAL DUCT	31, 40, 43, 49	AFT DORSAL DUCT	62, EBB, EBC	L FWD DUCTS	32L, 34L, 37L, 118L	KEEL DUCTS	27, 36, 42		
<u>Latched Indication</u>	<u>Doors</u>																	
L ENG DUCT	68L																	
R ENG DUCT	68R																	
R FWD DUCTS	32R, 34R																	
FWD DORSAL DUCT	31, 40, 43, 49																	
AFT DORSAL DUCT	62, EBB, EBC																	
L FWD DUCTS	32L, 34L, 37L, 118L																	
KEEL DUCTS	27, 36, 42																	
(2) Inspect door(s) area for bleed air leak.																		
(3) Is there evidence of a bleed air leak?.....	k	j																
j. Locate and repair bleed air leak as required (A1-F18AC-410-300) and do step o.....	-	-																
k. Do substeps below:																		
(1) If right forward duct latched on bleed air leak detection warning system control unit and no evidence of a bleed air leak, remove primary heat exchanger (A1-F18AC-410-300, WP029 00) and inspect heat exchanger core for damage. If left forward duct latched on bleed air leak detection warning system control unit and no evidence of a bleed air leak, remove secondary heat exchanger (A1-F18AC-410-300, WP033 00) and inspect heat exchanger core for damage.																		
(2) Install primary or secondary heat exchanger, if removed. (A1-F18AC-410-300, WP029 00 or WP033 00).																		
(3) Do bleed air leak test (A1-F18AC-410-200, WP008 00).																		
(4) Was there a bleed air leak?	l	j																
l. Do substeps below:																		
(1) Disconnect 24P-P011 from bleed air leak detection warning system control unit.																		

Table 1. Code 831, Bleed Air Leak or Bleed Air Leak Detection Fail (Continued)

Procedure	No	Yes																																												
(2) Does continuity exist between 24P-P011 pins corresponding to latch indicator as listed below: (normal indication continuity does not exist)																																														
<table><tr><th><u>Latched Indication</u></th><th><u>24P-P011</u></th><td></td><td></td></tr><tr><td>L ENG DUCT</td><td>pin 37 to pin 41?</td><td>e</td><td>m</td></tr><tr><td>R ENG DUCT</td><td>pin 32 to pin 35?</td><td>e</td><td>m</td></tr><tr><td>R FWD DUCTS</td><td>pin 18 to pin 30?</td><td>e</td><td>m</td></tr><tr><td>FWD DORSAL DUCT</td><td>pin 17 to pin 28</td><td>e</td><td>m</td></tr><tr><td></td><td>pin 13 to pin 26?</td><td></td><td></td></tr><tr><td>AFT DORSAL DUCT</td><td>pin 12 to pin 24</td><td></td><td></td></tr><tr><td></td><td>pin 11 to pin 21?</td><td>e</td><td>m</td></tr><tr><td>L FWD DUCTS</td><td>pin 10 to pin 16?</td><td>e</td><td>m</td></tr><tr><td>KEEL DUCTS</td><td>pin 6 to pin 9?</td><td>e</td><td>m</td></tr></table>	<u>Latched Indication</u>	<u>24P-P011</u>			L ENG DUCT	pin 37 to pin 41?	e	m	R ENG DUCT	pin 32 to pin 35?	e	m	R FWD DUCTS	pin 18 to pin 30?	e	m	FWD DORSAL DUCT	pin 17 to pin 28	e	m		pin 13 to pin 26?			AFT DORSAL DUCT	pin 12 to pin 24				pin 11 to pin 21?	e	m	L FWD DUCTS	pin 10 to pin 16?	e	m	KEEL DUCTS	pin 6 to pin 9?	e	m						
<u>Latched Indication</u>	<u>24P-P011</u>																																													
L ENG DUCT	pin 37 to pin 41?	e	m																																											
R ENG DUCT	pin 32 to pin 35?	e	m																																											
R FWD DUCTS	pin 18 to pin 30?	e	m																																											
FWD DORSAL DUCT	pin 17 to pin 28	e	m																																											
	pin 13 to pin 26?																																													
AFT DORSAL DUCT	pin 12 to pin 24																																													
	pin 11 to pin 21?	e	m																																											
L FWD DUCTS	pin 10 to pin 16?	e	m																																											
KEEL DUCTS	pin 6 to pin 9?	e	m																																											
m. Do substeps below:																																														
(1) Remove or open door(s), as required, below (A1-F18AC-LMM-010), to gain access to sensing element corresponding to latched indicator:																																														
<table><tr><th><u>Sensing Element</u></th><th><u>Door</u></th><td></td><td></td></tr><tr><td>L ENG DUCT</td><td>68L</td><td></td><td></td></tr><tr><td>R ENG DUCT</td><td>68R</td><td></td><td></td></tr><tr><td>R FWD DUCTS</td><td>32R</td><td></td><td></td></tr><tr><td>FWD DORSAL DUCT</td><td>31, 49</td><td></td><td></td></tr><tr><td>AFT DORSAL DUCT</td><td>62, EBB</td><td></td><td></td></tr><tr><td>L FWD DUCTS</td><td>32L</td><td></td><td></td></tr><tr><td>KEEL DUCTS</td><td>42</td><td></td><td></td></tr></table>	<u>Sensing Element</u>	<u>Door</u>			L ENG DUCT	68L			R ENG DUCT	68R			R FWD DUCTS	32R			FWD DORSAL DUCT	31, 49			AFT DORSAL DUCT	62, EBB			L FWD DUCTS	32L			KEEL DUCTS	42																
<u>Sensing Element</u>	<u>Door</u>																																													
L ENG DUCT	68L																																													
R ENG DUCT	68R																																													
R FWD DUCTS	32R																																													
FWD DORSAL DUCT	31, 49																																													
AFT DORSAL DUCT	62, EBB																																													
L FWD DUCTS	32L																																													
KEEL DUCTS	42																																													
(2) Disconnect applicable connector(s) listed below:																																														
<table><tr><th><u>Sensing Element</u></th><th><u>Electrical Plug</u></th><td></td><td></td></tr><tr><td>L ENG DUCT</td><td>(24U-S009) 24U-S009</td><td></td><td></td></tr><tr><td>R ENG DUCT</td><td>(24U-T010) 24U-T010</td><td></td><td></td></tr><tr><td>R FWD DUCTS</td><td>(24U-N021) 24U-N021</td><td></td><td></td></tr><tr><td></td><td>(24U-N006) 24U-N006</td><td></td><td></td></tr><tr><td>FWD DORSAL DUCT</td><td>(24U-R004) 24U-R004</td><td></td><td></td></tr><tr><td></td><td>(24U-P005) 24U-P005</td><td></td><td></td></tr><tr><td>AFT DORSAL DUCT</td><td>(24U-P007) 24U-P007</td><td></td><td></td></tr><tr><td></td><td>(24U-T008) 24U-Y008</td><td></td><td></td></tr><tr><td>L FWD DUCTS</td><td>(24U-M002) 24U-M002</td><td></td><td></td></tr><tr><td>KEEL DUCTS</td><td>(24U-P003) 24U-P003</td><td></td><td></td></tr></table>	<u>Sensing Element</u>	<u>Electrical Plug</u>			L ENG DUCT	(24U-S009) 24U-S009			R ENG DUCT	(24U-T010) 24U-T010			R FWD DUCTS	(24U-N021) 24U-N021				(24U-N006) 24U-N006			FWD DORSAL DUCT	(24U-R004) 24U-R004				(24U-P005) 24U-P005			AFT DORSAL DUCT	(24U-P007) 24U-P007				(24U-T008) 24U-Y008			L FWD DUCTS	(24U-M002) 24U-M002			KEEL DUCTS	(24U-P003) 24U-P003				
<u>Sensing Element</u>	<u>Electrical Plug</u>																																													
L ENG DUCT	(24U-S009) 24U-S009																																													
R ENG DUCT	(24U-T010) 24U-T010																																													
R FWD DUCTS	(24U-N021) 24U-N021																																													
	(24U-N006) 24U-N006																																													
FWD DORSAL DUCT	(24U-R004) 24U-R004																																													
	(24U-P005) 24U-P005																																													
AFT DORSAL DUCT	(24U-P007) 24U-P007																																													
	(24U-T008) 24U-Y008																																													
L FWD DUCTS	(24U-M002) 24U-M002																																													
KEEL DUCTS	(24U-P003) 24U-P003																																													
(3) Does continuity exist from sensing element receptacle pin B to pin E?	d	n																																												

Table 1. Code 831, Bleed Air Leak or Bleed Air Leak Detection Fail (Continued)

Procedure	No	Yes																						
n. Replace applicable sensing element listed below (A1-F18AC-410-300) and do step o.																								
<table><tr><th>Sensing Element</th><th>Work Package</th></tr><tr><td>L ENG DUCT (24U-S009)</td><td>016 00</td></tr><tr><td>R ENG DUCT (24U-T010)</td><td>016 00</td></tr><tr><td>R FWD DUCTS (24U-N021)</td><td>024 00</td></tr><tr><td>(24U-N006)</td><td>024 00</td></tr><tr><td>FWD DORSAL DUCT (24U-R004)</td><td>021 00</td></tr><tr><td>(24U-P005)</td><td>021 00</td></tr><tr><td>AFT DORSAL DUCT (24U-P007)</td><td>019 00</td></tr><tr><td>(24U-T008)</td><td>019 00</td></tr><tr><td>L FWD DUCTS (24U-M002)</td><td>022 00</td></tr><tr><td>KEEL DUCTS (24U-P003)</td><td>017 00.....</td></tr></table>	Sensing Element	Work Package	L ENG DUCT (24U-S009)	016 00	R ENG DUCT (24U-T010)	016 00	R FWD DUCTS (24U-N021)	024 00	(24U-N006)	024 00	FWD DORSAL DUCT (24U-R004)	021 00	(24U-P005)	021 00	AFT DORSAL DUCT (24U-P007)	019 00	(24U-T008)	019 00	L FWD DUCTS (24U-M002)	022 00	KEEL DUCTS (24U-P003)	017 00.....	-	-
Sensing Element	Work Package																							
L ENG DUCT (24U-S009)	016 00																							
R ENG DUCT (24U-T010)	016 00																							
R FWD DUCTS (24U-N021)	024 00																							
(24U-N006)	024 00																							
FWD DORSAL DUCT (24U-R004)	021 00																							
(24U-P005)	021 00																							
AFT DORSAL DUCT (24U-P007)	019 00																							
(24U-T008)	019 00																							
L FWD DUCTS (24U-M002)	022 00																							
KEEL DUCTS (24U-P003)	017 00.....																							
o. If disconnected, removed, or opened during this procedure, make sure the items listed below are connected, installed, or closed:																								
(1) 85P-N002C																								
(2) 85P-F042D																								
(3) 24P-P011																								
(4) Sensing Element Electrical Plug																								
(5) Door 46L																								
(6) Door 32R																								
(7) Door 14R																								
(8) Sensing Element Door(s)	-	-																						

ORGANIZATIONAL MAINTENANCE

FAULT ISOLATION MANUAL

TROUBLESHOOTING PROCEDURE

Reference Material

Line Maintenance Procedures	A1-F18AC-LMM-000
Line Maintenance Access Doors.....	A1-F18AC-LMM-010
Environmental Control Systems.....	A1-F18AC-410-500
Bleed Air System.....	WP005 00

Alphabetical Index

Subject	Page No.
Table 1.....	1

Record of Applicable Technical Directives

None

Table 1. Code 833 or Codes 832 and 833

Support Equipment Required

NOTE

Alternate item type designations or part numbers are listed in parentheses.

Part Number or Type Designation	Nomenclature
260-6XLP (AN/USM-311)	Multimeter

Table 1. Code 833 or Codes 832 and 833 (Continued)


<p style="text-align: center;">Materials Required</p> <p style="text-align: center;">None</p> <p style="text-align: center;">NOTE</p> <p>Bleed Air System Schematic (A1-F18AC-410-500, WP005 00) may be used as an aid when doing this procedure.</p> <p>For component locator, refer to A1-F18AC-410-500, WP005 00.</p> <p>Malfunction is caused by one of the items below:</p> <p>Aircraft Wiring Engine Bleed Air Secondary Pressure Regulating and Shutoff Valve Left Engine Bleed Air Pressure Regulating and Shutoff Valve No. 4 Relay Panel Assembly Right Engine Bleed Air Pressure Regulating and Shutoff Valve Secondary Bleed Air Overpressure Switch</p>		
Procedure	No	Yes
<p style="text-align: center;"></p> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use RX1 scale.</p> <p style="text-align: center;">NOTE</p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"> 1. Pin to pin test per procedural step. 2. Shorts to ground. 3. Shorts between surrounding pins on connectors. 4. Shorts between shield and conductors. 5. Shield continuity. <p>a. Do substeps below:</p> <ol style="list-style-type: none"> (1) Do nose wheelwell digital display indicator built-in test/reset procedure (A1-F18AC-LMM-000). (2) Apply electrical power (A1-F18AC-LMM-000). (3) On GND PWR control panel assembly, set and hold 1 switch to A ON for three seconds. 		

Table 1. Code 833 or Codes 832 and 833 (Continued)

Procedure	No	Yes
(4) Does code 833 exist?	g	b
b. Do substeps below:		
(1) Turn off electrical power (A1-F18AC-LMM-000).		
(2) Open door 68L (A1-F18AC-LMM-010).		
(3) Disconnect 22P-S018 from secondary bleed air overpressure switch (switch).		
(4) Does continuity exist from 22S-S018 switch receptacle pin 2 to pin 3?	d	c
c. Replace secondary bleed air overpressure switch (A1-F18AC-410-300, WP009 00) and do step k	-	-
d. Do substeps below:		
(1) Remove door 32R (A1-F18AC-LMM-010).		
(2) Disconnect 52P-N118B from no. 4 relay panel assembly.		
(3) On F/A-18A AND F/A-18B, disconnect 85P-N002C from Signal Data Converter CV-3493/ASM-612.		
(4) On F/A-18C AND F/A-18D, open door 14R (A1-F18AC-LMM-010).		
(5) On F/A-18C AND F/A-18D, disconnect 85P-F042D from Signal Data Computer CP-1726/ASQ-194.		
(6) On F/A-18A AND F/A-18B, does continuity exist from:		
52P-N118B pin 51 to 22P-S018 pin 2		
52P-N118B pin 34 to 85P-N002C pin 33?	e	f
(7) On F/A-18C AND F/A-18D, does continuity exist from:		
52P-N118B pin 51 to 22P-S018 pin 2		
52P-N118B pin 34 to 85P-F042D pin 111?	e	f
e. Isolate defective aircraft wiring (A1-F18A()-WDM-000) and do step k	-	-
f. Isolate between no. 4 relay panel assembly wiring and relay 22K-N046 (A1-F18AC-420-300, WP037 00) and do step k	-	-
g. Do substeps below:		
(1) Start engines and run at 80 percent (A1-F18AC-LMM-000).		

Table 1. Code 833 or Codes 832 and 833 (Continued)

Procedure	No	Yes
(2) On ECS panel assembly, set BLEED AIR switch to R OFF.		
(3) Do nose wheelwell digital display indicator built-in test/reset procedure (A1-F18AC-LMM-000).		
(4) Does code 833 exist?	h	i
h. Replace right engine bleed air pressure regulating and shutoff valve (A1-F18AC-410-300, WP005 00) and engine bleed air secondary pressure regulating and shutoff valve (A1-F18AC-410-300, WP008 00) and do step k	-	-
i. Do substeps below:		
(1) On ECS panel assembly, set BLEED AIR switch to L OFF.		
(2) Do nose wheelwell digital display indicator built-in test/reset procedure (A1-F18AC-LMM-000).		
(3) Does code 833 exist?	j	c
j. Replace left engine bleed air pressure regulating and shutoff valve (A1-F18AC-410-300, WP005 00) and engine bleed air secondary pressure regulating and shutoff valve (A1-F18AC-410-300, WP008 00) and do step k	-	-
k. If disconnected, removed, or opened during this procedure, make sure the items listed below are connected, installed, or closed:		
(1) Shut down engine		
(2) Remove electrical power		
(3) 22P-S018		
(4) 52P-N118B		
(5) 85P-F042D		
(6) 85P-N002C		
(7) Door 68L		
(8) Door 14R		
(9) Door 32R.....	-	-

ORGANIZATIONAL MAINTENANCE

FAULT ISOLATION MANUAL

TROUBLESHOOTING PROCEDURE

Title	WP Number
Troubleshooting Procedure F/A-18A/B	085 01
Troubleshooting Procedure F/A-18C/D	085 02

ORGANIZATIONAL MAINTENANCE

FAULT ISOLATION MANUAL

TROUBLESHOOTING PROCEDURE

EFFECTIVITY: F/A-18A/B

This WP supersedes WP085 01, dated 15 December 1987.

Reference Material

Line Maintenance Procedures	A1-F18AC-LMM-000
Line Maintenance Access Doors.....	A1-F18AC-LMM-010
Secondary Power System	A1-F18AC-240-500
Component Locator.....	WP003 00

Alphabetical Index

Subject	Page No.
Table 1.....	2

Record of Applicable Technical Directives

None

Table 1. L or R AMAD Caution


<p>Support Equipment Required</p> <p>NOTE</p> <p>Alternate item type designations or part numbers are listed in parentheses.</p> <table style="width: 100%; border: none;"> <tr> <td style="text-align: left; width: 50%;">Part Number or Type Designation</td> <td style="text-align: left; width: 50%;">Nomenclature</td> </tr> <tr> <td>77AN</td> <td>Multimeter</td> </tr> <tr> <td>(260-6XLP)</td> <td></td> </tr> <tr> <td>61A108J-1</td> <td>Preoiler (PON 6)</td> </tr> </table> <p>Materials Required</p> <p style="text-align: center;">None</p> <p>NOTE</p> <p>Engine Start and Ground Maintenance Mode Schematic (A1-F18AC-240-500, WP005 00) may be used as an aid when doing this procedure.</p> <p>For component locator, refer to A1-F18AC-240-500, WP003 00.</p> <p>Malfunction is caused by one of the items below:</p> <ul style="list-style-type: none"> Aircraft Wiring Airframe Mounted Accessory Drive (AMAD) AMAD Oil Over Serviced AMAD Oil Temperature Thermostat Engine Fuel Shutoff Valve Heat Exchanger Wash Filter No. 4 Relay Panel Assembly 			Part Number or Type Designation	Nomenclature	77AN	Multimeter	(260-6XLP)		61A108J-1	Preoiler (PON 6)
Part Number or Type Designation	Nomenclature									
77AN	Multimeter									
(260-6XLP)										
61A108J-1	Preoiler (PON 6)									
Procedure	No	Yes								
<div style="text-align: center; margin-bottom: 20px;">  </div> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switch/relay contacts may use RX1 scale.</p> <p>To prevent damage to aircraft wiring or equipment, make sure multimeter leads/jumper wires are installed on correct pins. When electrical power is off, 24vdc battery voltage exists on some pins of connectors listed below:</p> <p style="text-align: center;">No. 4 Relay Panel Assembly 52P-N118A</p>										

Table 1. L or R AMAD Caution (Continued)

Procedure	No	Yes
<p style="text-align: center;">NOTE</p> <p>The question used in logic tree "Does continuity exist" means to test for the items listed below:</p> <ol style="list-style-type: none"> 1. Pin to pin test per procedural step. 2. Shorts to ground. 3. Shorts between surrounding pins on connectors. 4. Shorts between shield and conductors. 5. Shield continuity. 		
a. Are any maintenance codes listed below displayed on the nose wheelwell digital display indicator (A1-F18AC-LMM-000)?	c	b
(1) 816 - Left AMAD oil pressure low. (Table 3, A1-F18AC-240-200, WP005 05)		
(2) 817 - Right AMAD oil pressure low. (Table 3, A1-F18AC-240-200, WP005 05)		
(3) 942 - Right fuel shutoff valve closed (Table 9, A1-F18AC-460-200, WP012 07)		
(4) 943 - Left fuel shutoff valve closed (Table 10, A1-F18AC-460-200, WP012 07)		
(5) 982 - Left AMAD oil level low. (Table 1, A1-F18AC-240-200, WP005 05)		
(6) 983 - Right AMAD oil level low. (Table 2, A1-F18AC-FIM-000, WP005 05)		
(7) AMAD oil filter Δ P indicator. If extended refer to A1-F18AC-240-300, WP029 00.		
b. Do applicable troubleshooting procedure (step a)	-	-
c. Do substeps below:		
(1) Open door 54 L or R (A1-F18AC-LMM-010).		
(2) Connect preoiler overflow hose to AMAD overflow connection.		
(3) Is AMAD over serviced (A1-F18AC-PCM-000)?	d	e
d. Remove and inspect AMAD chip detector (A1-F18AC-240-300, WP021 00). Are chips present?	f	h
e. Drain excess oil from overflow connection, install overflow connection cap, and do step o	-	-
f. Clean or replace left or right heat exchanger wash filter (A1-F18AC-460-300, WP138 01). If malfunction still exists do table 1 (A1-F18AC-460-200, WP015 00). Does malfunction still exist?	o	g

Table 1. L or R AMAD Caution (Continued)

Procedure	No	Yes
g. Do substeps below:		
(1) Remove door 53 L or R (A1-F18AC-LMM-010).		
(2) Remove air turbine starter (A1-F18AC-240-300, WP025 00).		
(3) Disconnect 3P-P064 (left) or 3P-R065 (right) from AMAD oil temperature thermostat.		
(4) Remove door 32R (A1-F18AC-LMM-010).		
(5) Disconnect 52P-N118A from no. 4 relay panel assembly.		
(6) Does continuity exist from:		
Left AMAD		
3P-P064 pin A to aircraft ground		
3P-P064 pin B to 52P-N118A pin 30?	i	j
Right AMAD		
3P-R065 pin A to aircraft ground		
3P-R065 pin B to 52P-N118A pin 14?	i	j
h. See table 4 (A1-F18AC-240-300, WP029 00) and do step o	-	-
i. Isolate defective aircraft wiring (A1-F18A()-WDM-000) and do step o	-	-
j. Does diode action exist from:		
Left AMAD		
no. 4 relay panel assembly receptacle 52J-N118A pin 9 to pin 30?	k	l
Right AMAD		
no. 4 relay panel assembly receptacle 52J-N118A pin 13 to pin 14?	k	l
k. Isolate between no. 4 relay panel assembly wiring and diode 3CRN071 (left) or 3CRN070 (right) (A1-F18AC-420-300, WP037 00) and do step o	-	-
l. Do substeps below:		
(1) Disconnect 85P-N002C from Signal Data Converter CV-3493/ASM-612 (door 32R).		

Table 1. L or R AMAD Caution (Continued)

Procedure	No	Yes
(2) Does continuity exist from:		
Left AMAD		
52P-N118A pin 9 to 85P-N002C pin 38?	i	m
Right AMAD		
52P-N118A pin 13 to 85P-N002C pin 42?	i	m
m. Do substeps below:		
(1) Replace AMAD oil temperature thermostat (A1-F18AC-240-300, WP027 00).		
(2) Install air turbine starter (A1-F18AC-240-300, WP025 00).		
(3) Connect 52P-N118A to no. 4 relay panel assembly.		
(4) Connect 85P-N002C to Signal Data Converter CV-3493/ASM-612.		
(5) Operate AMAD under the same conditions and length of time as when malfunction occurred. Does malfunction reoccur?	o	n
n. Replace AMAD (A1-F18AC-240-300, WP020 00) and do step o	-	-
o. If disconnected, removed, or opened during this procedure, make sure items listed below are connected, installed, or closed: (QA)		
(1) Air Turbine Starter		
(2) Generator Converter Unit		
(3) 3P-P064		
(4) 3P-R065		
(5) 52P-N118A		
(6) 85P-N002C		
(7) Door 32R		
(8) Door 53 L or R		
(9) Door 54 L or R		
(10) AMAD		
(11) AMAD Chip Detector	-	-

ORGANIZATIONAL MAINTENANCE

FAULT ISOLATION MANUAL

TROUBLESHOOTING PROCEDURE

EFFECTIVITY: F/A-18C/D

This WP supersedes WP085 02, dated 15 December 1987.

Reference Material

Line Maintenance Procedures	A1-F18AC-LMM-000
Line Maintenance Access Doors.....	A1-F18AC-LMM-010
Secondary Power System	A1-F18AC-240-500
Component Locator.....	WP003 00

Alphabetical Index

Subject	Page No.
Table 1.....	2

Record of Applicable Technical Directives

None

Table 1. L or R AMAD Caution

Support Equipment Required

NOTE

Alternate item type designations or part numbers are listed in parentheses.

Part Number or Type Designation	Nomenclature
77AN	Multimeter
(260-6XLP)	
61A108J-1	Preoiler (PON 6)

Materials Required

None

NOTE

Engine Start and Ground Maintenance Mode Schematic (A1-F18AC-240-500, WP005 00) may be used as an aid when doing this procedure.

For component locator, refer to A1-F18AC-240-500, WP003 00.

Malfunction is caused by one of the items below:

Aircraft Wiring
Airframe Mounted Accessory Drive (AMAD)
AMAD Oil Over Serviced
AMAD Oil Temperature Thermostat
Engine Fuel Shutoff Valve
Heat Exchanger Wash Filter
No. 4 Relay Panel Assembly

Procedure

No

Yes

CAUTION

To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switch/relay contacts may use RX1 scale.

To prevent damage to aircraft wiring or equipment, make sure multimeter leads/jumper wires are installed on correct pins. When electrical power is off, 24vdc battery voltage exists on some pins of connectors listed below:

No. 4 Relay Panel Assembly 52P-N118A

Table 1. L or R AMAD Caution (Continued)

Procedure	No	Yes
<p style="text-align: center;">NOTE</p> <p>The question used in logic tree "Does continuity exist" means to test for the items listed below:</p> <ol style="list-style-type: none"> 1. Pin to pin test per procedural step. 2. Shorts to ground. 3. Shorts between surrounding pins on connectors. 4. Shorts between shield and conductors. 5. Shield continuity. 		
a. Are any maintenance codes listed below displayed on the nose wheelwell digital display indicator (A1-F18AC-LMM-000)?	c	b
(1) 816 - Left AMAD oil pressure low. (A1-F18AC-240-200, WP005 07)		
(2) 817 - Right AMAD oil pressure low. (A1-F18AC-240-200, WP005 07)		
(3) 447 - Right fuel shutoff valve failed. (A1-F18AE-460-200, WP003 01)		
(4) 441 - Left fuel shutoff valve failed. (A1-F18AE-460-200, WP003 01)		
(5) 982 - Left AMAD oil level low. (A1-F18AC-240-200, WP005 07)		
(6) 983 - Right AMAD oil level low. (A1-F18AC-240-200, WP005 07)		
(7) AMAD oil filter Δ P indicator. If extended refer to A1-F18AC-240-300, WP029 00.		
b. Do applicable troubleshooting procedure (step a)	-	-
c. Do substeps below:		
(1) Open door 54 L or R (A1-F18AC-LMM-010).		
(2) Connect preoiler overflow hose to AMAD overflow connection.		
(3) Is AMAD over serviced (A1-F18AC-PCM-000)?	d	e
d. Remove and inspect AMAD chip detector (A1-F18AC-240-300, WP021 00). Are chips present?	f	h
e. Drain excess oil from overflow connection, install overflow connection cap, and do step o	-	-
f. Clean or replace left or right heat exchanger wash filter (A1-F18AE-460-300, WP169 00). If malfunction still exists do table 1 (A1-F18AE-460-200, WP026 00). Does malfunction still exist?	o	g
g. Do substeps below:		
(1) Remove door 53 L or R (A1-F18AC-LMM-010).		
(2) Remove air turbine starter (A1-F18AC-240-300, WP025 00).		
(3) Disconnect 3P-P064 (left) or 3P-R065 (right) from AMAD oil temperature thermostat.		
(4) Remove door 32R (A1-F18AC-LMM-010).		
(5) Disconnect 52P-N118A from no. 4 relay panel assembly.		

Table 1. L or R AMAD Caution (Continued)

Procedure	No	Yes
(6) Does continuity exist from:		
Left AMAD		
3P-P064 pin A to aircraft ground		
3P-P064 pin B to 52P-N118A pin 30?	i	j
Right AMAD		
3P-R065 pin A to aircraft ground		
3P-R065 pin B to 52P-N118A pin 14?	i	j
h. See table 4 (A1-F18AC-240-300, WP029 00) and do step o.....	-	-
i. Isolate defective aircraft wiring (A1-F18A()-WDM-000) and do step o.....	-	-
j. Does diode action exist from:		
Left AMAD		
no. 4 relay panel assembly receptacle 52J-N118A pin 9 to pin 30?	k	l
Right AMAD		
no. 4 relay panel assembly receptacle 52J-N118A pin 13 to pin 14?	k	l
k. Isolate between no. 4 relay panel assembly wiring and diode 3CRN071 (left) or 3CRN070 (right) (A1-F18AC-420-300, WP037 00) and do step o.....	-	-
l. Do substeps below:		
(1) Disconnect 85P-F042D from Signal Data Computer CP-1726/ASQ-194 (door 14R).		
(2) Does continuity exist from:		
Left AMAD		
52P-N118A pin 9 to 85P-F042D pin 93?	i	m
Right AMAD		
52P-N118A pin 13 to 85P-F042 pin 96?	i	m
m. Do substeps below:		
(1) Replace AMAD oil temperature thermostat (A1-F18AC-240-300, WP027 00).		
(2) Install air turbine starter (A1-F18AC-240-300, WP025 00).		
(3) Connect 52P-N118A to no. 4 relay panel assembly.		
(4) Connect 85P-F042D to Signal Data Computer CP-1726/ASQ-194.		
(5) Operate AMAD under the same conditions and length of time as when malfunction occurred. Does malfunction reoccur?	o	n
n. Replace AMAD (A1-F18AC-240-300, WP020 00) and do step o.....	-	-

Table 1. L or R AMAD Caution (Continued)

Procedure	No	Yes
<p>o. If disconnected, removed, or opened during this procedure, make sure items listed below are connected, installed, or closed: (QA)</p> <p>(1) Air Turbine Starter</p> <p>(2) Generator Converter Unit</p> <p>(3) 3P-P064</p> <p>(4) 3P-R065</p> <p>(5) 52P-N118A</p> <p>(6) 85P-F042D</p> <p>(7) Door 32R</p> <p>(8) Door 53 L or R</p> <p>(9) Door 54 L or R</p> <p>(10) AMAD</p>		

Table 1. L or R AMAD Caution (Continued)

Procedure	No	Yes
(11) AMAD Chip Detector		
(12) Door 14R.....	-	-

ORGANIZATIONAL MAINTENANCE

FAULT ISOLATION MANUAL

TROUBLESHOOTING PROCEDURE

This WP supersedes WP086 00, dated 15 December 1987.

Reference Material

Line Maintenance Procedures	A1-F18AC-LMM-000
Line Maintenance Access Doors.....	A1-F18AC-LMM-010
Environmental Control Systems.....	A1-F18AC-410-200
Testing.....	WP004 00
Environmental Control Systems.....	A1-F18AC-410-500
Air Cycle Air Conditioning System.....	WP007 00
Avionics Cooling System	WP009 00
Fault Isolation Manual.....	A1-F18AC-FIM-000
Troubleshooting Procedure.....	WP056 00
Piping Installation.....	A1-F18AC-PIM-000

Alphabetical Index

Subject	Page No.
Table 1.....	2

Record of Applicable Technical Directives

None

Table 1. Cabin Delivery Air Too Hot, AV AIR HOT Caution Message, No Change in MAN

Support Equipment Required

NOTE

Alternate item type designations or part numbers are listed in parentheses.

Part Number or Type Designation	Nomenclature
260-6XLP (AN/USM-311)	Multimeter
74D410141-1003 (74D410141-1001)	Test Set, ACS PRESSURE Indicator
-	Torque Wrench, 0 to 25 Inch-Pounds

Materials Required

None

NOTE

Avionics Cooling System Schematic, Except Cockpit (A1-F18AC-410-500, WP009 00) and Air Cycle Air Conditioning System Schematic (A1-F18AC-410-500, WP007 00) may be used as an aid when doing this procedure.

For component locator, refer to A1-F18AC-410-500, WP007 00 and WP009 00.

Malfunction is caused by one of the items below:

ACS Temperature/Flow Controller
 Aircraft Wiring
 Anti-Ice Add Heat Valve
 Avionics Air Flow/Temperature Sensor
 Condenser/Reheater Heat Exchanger
 No. 3 Relay Panel Assembly
 Secondary Ejector Valve
 Secondary Heat Exchanger
 System Flow Modulating Pressure Regulator
 Tube Assembly
 Turbine/Compressor Assembly
 Flow/Temperature Limiting Anti-Ice Modulating Valve

Table 1. Cabin Delivery Air Too Hot, AV AIR HOT Caution Message, No Change in MAN (Continued)


Procedure	No	Yes
<div style="text-align: center;">  <p>CAUTION</p> </div> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use RX1 scale.</p> <p style="text-align: center;">NOTE</p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"> 1. Pin to pin test per procedural step. 2. Shorts to ground. 3. Shorts between surrounding pins on connectors. 4. Shorts between shield and conductors. 5. Shield continuity. <p>When testing for resistance also test for shorts to ground.</p> <p>WP004 00, table 2 of the A1-F18AC-410-200 manual can be used to identify both a faulty Environmental Control System (ECS), and the component most likely to have caused the faulty condition. Refer to this table to reduce maintenance time, or if problems are encountered during troubleshooting.</p> <p>a. Do substeps below:</p> <ol style="list-style-type: none"> (1) Make sure electrical power is off (A1-F18AC-LMM-000). (2) Open door 10R (A1-F18AC-LMM-010). (3) Disconnect 22P-D002B from ACS temperature/flow controller. (4) Do the resistance tests below: <ul style="list-style-type: none"> 22P-D002B pin 12 to pin 13 (value per temperature/resistance chart 1, WP056 00) 22P-D002B pin 2 to pin 7 (value per temperature/resistance chart 4, WP056 00) 22P-D002B pin 3 to pin 7 (value per temperature/resistance chart 5, WP056 00) 22P-D002B pin 1 to pin 6 (35 to 50 ohms) <p>Are resistance values correct?</p> <p>b. Do substeps below:</p> <ol style="list-style-type: none"> (1) Remove door 33 (A1-F18AC-LMM-010). (2) Disconnect 22P-E004 from avionics air flow/temperature sensor (sensor). 		
	b	e

Table 1. Cabin Delivery Air Too Hot, AV AIR HOT Caution Message, No Change in MAN (Continued)

Procedure	No	Yes
(3) Do the resistance tests below:		
22A-E004 sensor receptacle pin 2 to pin 10 (value per temperature/resistance chart 1, WP056 00)		
22A-E004 sensor receptacle pin 3 to pin 11 (value per temperature/resistance chart 4, WP056 00)		
22A-E004 sensor receptacle pin 3 to pin 4 (value per temperature/resistance chart 5, WP056 00)		
22A-E004 sensor receptacle pin 5 to pin 7 (35 to 50 ohms)		
Are resistance values correct?	c	d
c. Replace avionics air flow/temperature sensor (A1-F18AC-410-300, WP060 00) and do step ah.	-	-
d. Isolate defective aircraft wiring (A1-F18A()-WDM-000) and do step ah.	-	-
e. Do substeps below:		
(1) On 161353 THRU 161359, on no. 2 circuit breaker panel assembly, open ECS CONT (zone D13) circuit breaker, or on 161360 AND UP, on no. 4 circuit breaker panel assembly, open ECS CONT (zone C6) circuit breaker.		
(2) Disconnect 22P-D002A from ACS temperature/flow controller.		
(3) Measure resistance from 22P-D002A pin 19 to pin 26.		
(4) Is resistance 69 to 90 ohms?	f	h
f. Do substeps below:		
(1) Remove door 36 (A1-F18AC-LMM-010).		
(2) Disconnect 22P-R016 from anti-ice add heat valve (valve).		
(3) Measure resistance from 22L-R016 valve receptacle pin 1 to pin 3.		
(4) Is resistance 69 to 90 ohms?	g	d
g. Replace anti-ice add heat valve (A1-F18AC-410-300, WP042 00) and do step ah.	-	-
h. Do substeps below:		
(1) Measure resistance from 22P-D002A pin 18 to pin 26.		
(2) Is resistance 69 to 90 ohms?	i	m

Table 1. Cabin Delivery Air Too Hot, AV AIR HOT Caution Message, No Change in MAN (Continued)

Procedure	No	Yes
i. Do substeps below:		
(1) Remove door 129R (A1-F18AC-LMM-010).		
(2) Disconnect 22P-R015A from system flow modulating pressure regulator (regulator).		
(3) Measure resistance from 22L-R015 receptacle J1 pin 1 to pin 3.		
(4) Is resistance 69 to 90 ohms?	j	k
j. Replace system flow modulating pressure regulator (A1-F18AC-410-300, WP035 00) and do step ah.	-	-
k. Do substeps below:		
(1) Open door 13L (A1-F18AC-LMM-010).		
(2) Disconnect 52P-E059 from no. 3 relay panel assembly.		
(3) Does continuity exist from 52J-E059 pin 34 to pin 36?	l	d
l. Isolate between no. 3 relay panel assembly wiring and relay 22K-E145 (A1-F18AC-420-300, WP035 00) and do step ah	-	-
m. Do substeps below:		
(1) Remove door 36 (A1-F18AC-LMM-010).		
(2) Visually inspect position indicator on anti-ice add heat valve.		
(3) Is valve position indicator in the closed position?	g	n
n. Do substeps below:		
(1) On 161353 THRU 161359, on no. 2 circuit breaker panel assembly, close ECS CONT (zone D13) circuit breaker, or on 161360 AND UP, on no. 4 circuit breaker panel assembly, close ECS CONT (zone C6) circuit breaker.		
(2) Connect 22P-D002A and 22P-D002B to ACS temperature/flow controller.		
(3) Start APU and operate in ECS mode (A1-F18AC-LMM-000).		
(4) Visually inspect position indicator on anti-ice add heat valve.		
(5) Is valve position indicator in the full open position?	x	o

Table 1. Cabin Delivery Air Too Hot, AV AIR HOT Caution Message, No Change in MAN (Continued)

Procedure	No	Yes
o. Do substeps below:		
(1) In left main wheelwell, connect ACS pressure indicator test set gauge (0-30 psig) to ECS test port no. (III) (A1-F18AC-410-200, WP004 00).		
(2) Start APU and operate in ECS mode (A1-F18AC-LMM-000).		
(3) Test muscle pressure from flow/temperature limiting anti-ice modulating valve (valve) at test port (III) as listed below:		
On aircraft with valve P/N 979452-3-1 muscle pressure is 16 ±0.5 psig		
On aircraft with valve P/N 979452-5-2 muscle pressure is 16.5 ±0.5 psig		
On aircraft with valve P/N 979452-7-1 muscle pressure is 16 to 19 psig		
Is muscle pressure correct?	q	p
p. Replace flow/temperature limiting anti-ice modulating valve (A1-F18AC-410-300, WP110 00) and do step ah.....	-	-
q. Is down stream sense line between anti-ice add heat valve and condenser/reheater heat exchanger leaking?	s	r
r. Isolate and repair or replace down stream sense line (A1-F18AC-PIM-000) and do step ah	-	-
s. Do substeps below:		
(1) Shut down APU (A1-F18AC-LMM-000).		
(2) Remove down stream sense line between anti-ice heat valve and condenser/reheater heat exchanger.		
(3) Inspect down stream sense line for obstruction. Is line obstructed?	t	r
t. Inspect condenser/reheater heat exchanger sense line connection for obstruction. Is there obstruction?	v	z
u. Replace condenser/reheater heat exchanger (A1-F18AC-410-300, WP039 00) and do step ah	-	-
v. Inspect anti-ice add heat valve sense line connection for obstruction. Is there obstruction?..	w	g
w. Replace ACS temperature/flow controller (A1-F18AC-410-300, WP026 00) and do step ah	-	-
x. Do substeps below:		
(1) Remove door 129R (A1-F18AC-LMM-010).		

Table 1. Cabin Delivery Air Too Hot, AV AIR HOT Caution Message, No Change in MAN (Continued)


Procedure	No	Yes
(2) On system flow modulating pressure regulator, disconnect tube assembly from compressor protective temperature sensor. (3) On system flow modulating pressure regulator, observe position indicator. (4) Is position indicator in closed position?	j	y
y. Do substeps below: (1) Open doors 10R and 36 (A1-F18AC-LMM-010). (2) In door 36, disconnect tube assembly from elbow that attaches to the water extractor sump. Rotate elbow down away from aircraft. (3) Hook up proximity switch control (A1-F18AC-LMM-000). (4) Start APU and operate in ECS mode (A1-F18AC-LMM-000). (5) Make the following ECS control panel settings: <div style="display: flex; justify-content: space-between;"> ECS MODE AUTO </div> <div style="display: flex; justify-content: space-between;"> SUIT/CABIN TEMP full COLD </div> (6) On 161353 THRU 161359, on no. 4 circuit breaker panel assembly, open ADC (zone D8) circuit breaker. (7) On 161360 AND UP, on no. 2 circuit breaker panel assembly, open ADC (zone B12) circuit breaker. (8) On DEFOG control assembly, set WINDSHIELD ANTI-ICE/RAIN removal switch to ANTI-ICE.		
		
Components may be damaged due to overheat with ADC circuit breaker open and proximity switch set to WT OFF WHLS for more than 10 seconds.		
(9) On proximity switch control, set LEFT GEAR switch to WT OFF WHLS for not more than 10 seconds while doing step (10). (10) Does air flow from left ECS exhaust louver or in front of heat exchanger face in-board of nacelle?	ac	ad
z. Do substeps below: (1) Shut down APU (A1-F18AC-LMM-000). (2) Remove doors 36 and 42 (A1-F18AC-LMM-010).		

Table 1. Cabin Delivery Air Too Hot, AV AIR HOT Caution Message, No Change in MAN (Continued)


Procedure	No	Yes
<p>(3) In door 42, connect ACS pressure indicator test set gauge (0 to 30 psig) to ECS test port (IV) and in door 36, connect ACS pressure indicator test set gauge (0 to 5 psig) to ECS test port (V) (A1-F18AC-410-200, WP004 00).</p> <p>(4) Start and operate engines (A1-F18AC-LMM-000).</p> <p>(5) Make the following cockpit control settings:</p> <p style="text-align: right;">Engine compressor discharge pressure (CDP) 90 +/- 2 psi (single or dual engine operation)</p> <p style="text-align: right;">ECS MODE AUTO</p> <p style="text-align: right;">SUIT/CABIN TEMP full COLD</p> <p>(6) Measure and record pressure at ECS test port (V) (F/A-18A or F/A-18C > 1.0 psig, F/A-18B or F/A-18D > 2.0 psig).</p> <p>(7) Measure and record pressure at ECS test port (IV).</p> <p>(8) Is test port pressure (IV) minus test port pressure (V) below 2.5 psig ? u aa</p> <p>aa. Do substeps below:</p> <p>(1) Remove door 42 (A1-F18AC-LMM-010).</p> <p>(2) On aft end (compressor side) of turbine/compressor assembly, disconnect duct assembly and rotate up (A1-F18AC-PIM-000).</p> <p>(3) On aft end (compressor side) of turbine/compressor assembly, position a torque wrench with a hex driver in the shaft assembly.</p>		
		
<p>Turning turbine/compressor in clockwise direction may cause damage to the thrust bearings.</p> <p>(4) Turn torque wrench in counterclockwise direction and observe torque required to move turbine/compressor.</p> <p>(5) Is torque required to move turbine/compressor more than 12 inch-pounds?..... w ab</p> <p>ab. Replace turbine/compressor assembly (A1-F18AC-410-300, WP036 00) and do step ah..... - -</p> <p>ac. Malfunction is caused by one of the items listed below. Replace one of the items below:</p> <p>(1) Secondary heat exchanger (A1-F18AC-410-300, WP031 00) and do step ah.</p> <p>(2) Secondary ejector valve (A1-F18AC-410-300, WP032 00) and do step ah..... - -</p>		

Table 1. Cabin Delivery Air Too Hot, AV AIR HOT Caution Message, No Change in MAN (Continued)

Procedure	No	Yes
ad. Do substeps below:		
(1) Shut down APU (A1-F18AC-LMM-000).		
(2) Remove door 34R (A1-F18AC-LMM-010).		
(3) Disconnect 22P-N014 from secondary ejector valve.		
(4) Apply external electrical power (A1-F18AC-LMM-000).		
(5) Does 28vdc exist at 22P-N014 pin 3 to pin 1 (ground) (normal indication 28vdc not present) ?.....	ac	ae
ae. Do substeps below:		
(1) Turn off electrical power (A1-F18AC-LMM-000).		
(2) Open door 13L (A1-F18AC-LMM-010).		
(3) Disconnect 52P-E059 from no. 3 relay panel assembly.		
(4) Does continuity exist from 22P-N014 pin 3 to 52P-E059 pin 76?.....	f	af
af. Do substeps below:		
(1) Open door 13R (A1-F18AC-LMM-010).		
(2) Disconnect 70P-F001B from Air Data Computer CP-1334/A.		
(3) Does continuity exist from 70P-F001B pin 73 to 52P-E059 pin 77?	f	ag
ag. Malfunction is caused by either bad wiring or relay 22K-E038 in no. 3 relay panel assembly or internal malfunction of Air Data Computer. Replace one of the items below:		
(1) No. 3 relay panel assembly (A1-F18AC-420-300, WP036 00) and do step ah.		
(2) Air Data Computer (A1-F18AC-560-300, WP003 00) and do step ah	-	-
ah. If disconnected, removed, or opened during this procedure make sure the items listed below are connected, installed, or closed:		
(1) 22P-D002A		
(2) 22P-D002B		
(3) 22P-E004		
(4) 22P-R016		
(5) 22P-R015A		
(6) 52P-E059		
(7) Door 10R		
(8) Door 129R		
(9) Door 13L		
(10) Door 33		

Table 1. Cabin Delivery Air Too Hot, AV AIR HOT Caution Message, No Change in MAN (Continued)

Procedure	No	Yes
(11) Door 36		
(12) Door 42		
(13) Duct assembly (disconnected from turbine/compressor assembly)		
(14) ECS CONT circuit breaker		
(15) Tube assembly (disconnected from system flow modulating pressure regulator).....	-	-

ORGANIZATIONAL MAINTENANCE

FAULT ISOLATION MANUAL

TROUBLESHOOTING PROCEDURE

Reference Material

Line Maintenance Procedures	A1-F18AC-LMM-000
Line Maintenance Access Doors.....	A1-F18AC-LMM-010
Environmental Control Systems.....	A1-F18AC-410-200
Testing.....	WP004 00
Environmental Control Systems.....	A1-F18AC-410-500
Air Cycle Air Conditioning System.....	WP007 00
Cabin Cooling and Defog System.....	WP008 00
Avionics Cooling System	WP009 00
Windshield Anti-Ice and Rain Removal System	WP013 00
Fault Isolation Manual.....	A1-F18AC-FIM-000
Troubleshooting Procedure.....	WP056 00

Alphabetical Index

Subject	Page No.
Table 1.....	2

Record of Applicable Technical Directives

None

Table 1. Cabin Air No/Low Flow In Auto And In Manual

Support Equipment Required

NOTE

Alternate item type designations or part numbers are listed in parentheses.

Part Number or Type Designation	Nomenclature
260-6XLP (AN/USM-311)	Multimeter
74D410141-1003 (74D410141-1001)	Test Set, ACS PRESSURE Indicator

Materials Required

None

NOTE

Air Cycle Air Conditioning System Schematic (A1-F18AC-410-500, WP007 00), Cabin Cooling and Defog System Schematic (A1-F18AC-410-500, WP008 00), Avionics Cooling System Schematic, Except Cockpit (A1-F18AC-410-500, WP009 00) and Windshield Anti-Ice and Rain Removal System Schematic (A1-F18AC-410-500, WP013 00) may be used as an aid when doing this procedure.

For component locator, refer to A1-F18AC-410-500, WP007 00, WP008 00, WP009 00, and WP013 00.

Malfunction is caused by one of the items below:

- ACS Temperature/Flow Controller
- Aircraft Wiring
- Avionics Airflow/Temperature Sensor
- Avionics Ram Air Valve
- Avionics Ram Air Valve Servo
- Cabin Airflow/Temperature Sensor
- Cabin Flow Valve
- Compressor Protective Temperature Sensor
- No. 3 Relay Panel Assembly
- Primary Ejector Valve
- Primary Heat Exchanger
- Secondary Ejector Valve
- Secondary Heat Exchanger
- System Flow Modulating Pressure Regulator
- Turbine Protective Temperature Sensor

Table 1. Cabin Air No/Low Flow In Auto And In Manual (Continued)


Procedure	No	Yes
<div style="text-align: center;">  <p>CAUTION</p> </div> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use RX1 scale.</p> <p style="text-align: center;">NOTE</p> <p>The question used in logic tree "Does continuity exist" means to test for the items listed below:</p> <ol style="list-style-type: none"> 1. Pin to pin test per procedural step. 2. Shorts to ground. 3. Shorts between surrounding pins on connectors. 4. Shorts between shield and conductors. 5. Shield continuity. <p>When testing for resistance, also test for shorts to ground.</p> <p>WP004 00, table 2 of the A1-F18AC-410-200 manual can be used to identify both a faulty Environmental Control System (ECS), and the component most likely to have caused the faulty condition. Refer to this table to reduce maintenance time, or if problems are encountered during troubleshooting.</p> <p>a. Do substeps below:</p> <ol style="list-style-type: none"> (1) Make sure electrical power is off (A1-F18AC-LMM-000). (2) Open door 10R (A1-F18AC-LMM-010). (3) Disconnect 22P-D002B from ACS temperature/flow controller. (4) Do the resistance tests below: <ul style="list-style-type: none"> 22P-D002B pin 42 to pin 43 (value per temperature/resistance chart 1, WP056 00) 22P-D002B pin 50 to pin 55 (value per temperature/resistance chart 2, WP056 00) 22P-D002B pin 50 to pin 54 (value per temperature/resistance chart 3, WP056 00) 22P-D002B pin 49 to pin 53 (35 to 50 ohms) <p>Are resistance values correct?</p>		
	b	e

Table 1. Cabin Air No/Low Flow In Auto And In Manual (Continued)

Procedure	No	Yes
b. Do substeps below:		
(1) Disconnect 22P-E003 from cabin airflow/temperature sensor (sensor).		
(2) Do the resistance tests below:		
22A-E003 sensor receptacle pin 2 to pin 10 (value per temperature/resistance chart 1, WP056 00)		
22A-E003 sensor receptacle pin 3 to pin 4 (value per temperature/resistance chart 2, WP056 00)		
22A-E003 sensor receptacle pin 3 to pin 11 (value per temperature/resistance chart 3, WP056 00)		
22A-E003 sensor receptacle pin 5 to pin 7 (35 to 50 ohms)		
Are resistance values correct?	c	d
c. Replace cabin airflow/temperature sensor (A1-F18AC-410-300, WP046 00) and do step ay	-	-
d. Isolate defective aircraft wiring (A1-F18A()-WDM-000) and do step ay.....	-	-
e. Do the resistance tests below:		
22P-D002B pin 12 to pin 13 (value per temperature/resistance chart 1, WP056 00)		
22P-D002B pin 2 to pin 7 (value per temperature/resistance chart 4, WP056 00)		
22P-D002B pin 3 to pin 7 (value per temperature/resistance chart 5, WP056 00)		
22P-D002B pin 1 to pin 6 (35 to 50 ohms)		
Are resistance values correct?	f	h
f. Do substeps below:		
(1) Remove door 33 (A1-F18AC-LMM-010).		
(2) Disconnect 22P-E004 from avionics airflow/temperature sensor (sensor).		
(3) Do the resistance tests below:		
22A-E004 sensor receptacle pin 2 to pin 10 (value per temperature/resistance chart 1, WP056 00)		
22A-E004 sensor receptacle pin 3 to pin 11 (value per temperature/resistance chart 4, WP056 00)		
22A-E004 sensor receptacle pin 3 to pin 4 (value per temperature/resistance chart 5, WP056 00)		
22A-E004 sensor receptacle pin 5 to pin 7 (35 to 50 ohms)		
Are resistance values correct?	g	d
g. Replace avionics airflow/temperature sensor (A1-F18AC-410-300, WP060 00) and do step ay	-	-

Table 1. Cabin Air No/Low Flow In Auto And In Manual (Continued)

Procedure	No	Yes
h. Do substeps below:		
(1) On 161353 THRU 161359, on no. 2 circuit breaker panel assembly, open ECS CONT (zone D13) circuit breaker, or on 161360 AND UP, on no. 4 circuit breaker panel assembly, open ECS CONT (zone C6) circuit breaker.		
(2) Disconnect 22P-D002A from ACS temperature/flow controller.		
(3) Measure resistance from 22P-D002A pin 18 to pin 26.		
(4) Is resistance 69 to 90 ohms?	i	m
i. Do substeps below:		
(1) Remove door 129R (A1-F18AC-LMM-010).		
(2) Disconnect 22P-R015A from system flow modulating pressure regulator (regulator).		
(3) Measure resistance from 22L-R015 receptacle J1 pin 1 to pin 3.		
(4) Is resistance 69 to 90 ohms?	j	k
j. Replace system flow modulating pressure regulator (A1-F18AC-410-300, WP035 00) and do step ay.....	-	-
k. Do substeps below:		
(1) Open door 13L (A1-F18AC-LMM-010).		
(2) Disconnect 52P-E059 from no. 3 relay panel assembly.		
(3) Does continuity exist from 52J-E059 pin 34 to pin 36?	l	d
l. Isolate between no. 3 relay panel assembly wiring and relay 22K-E145 (A1-F18AC-420-300, WP036 00) and do step ay.....	-	-
m. Do substeps below:		
(1) Measure resistance from 22P-D002A pin 26 to pin 41.		
(2) Is resistance 69 to 90 ohms?	n	s
n. Do substeps below:		
(1) Remove door 27 (A1-F18AC-LMM-010).		
(2) Disconnect 22P-R006 from cabin flow valve (valve).		
(3) Measure resistance from 22L-R006 valve receptacle pin 1 to pin 3.		
(4) Is resistance 69 to 90 ohms?	o	p
o. Replace cabin flow valve (A1-F18AC-410-300, WP044 00) and do step ay	-	-
p. Do substeps below:		
(1) Open door 13L (A1-F18AC-LMM-010).		
(2) Disconnect 52P-E059 from no. 3 relay panel assembly.		
(3) Does continuity exist from 52J-E059 pin 25 to pin 46?	l	q

Table 1. Cabin Air No/Low Flow In Auto And In Manual (Continued)

Procedure	No	Yes
q. Does continuity exist from: 22P-D002A pin 26 to 22P-R006 pin 3 22P-D002A pin 41 to 52P-E059 pin 25 22P-R006 pin 1 to 52P-E059 pin 46?.....	d	r
r. Replace ACS temperature/flow controller (A1-F18AC-410-300, WP026 00) and do step ay.....	-	-
s. Do substeps below: (1) Remove door 27 (A1-F18AC-LMM-010). (2) Does cabin flow valve position indicator indicate full OPEN?.....	o	t
t. Do substeps below: (1) Remove door 129R (A1-F18AC-LMM-010). (2) Does system flow modulating pressure regulator position indicator indicate full OPEN?.....	j	u
u. Do substeps below: (1) Open door 10R (A1-F18AC-LMM-010). (2) Connect 22P-D002A and 22P-D002B to ACS temperature/flow controller. (3) On 161353 THRU 161359, on no. 2 circuit breaker panel assembly, close ECS CONT (zone D13) circuit breaker, or on 161360 AND UP, on no. 4 circuit breaker panel assembly, open ECS CONT (zone C6) circuit breaker. (4) Hook up proximity switch control (A1-F18AC-LMM-000). (5) Start and operate engines (A1-F18AC-LMM-000). (6) Make the following cockpit control settings: Engine compressor discharge pressure (CDP) 90 +/- 2 psi ECS MODE OFF RAM SUIT/CABIN TEMP full COLD (7) On 161353 THRU 161359, on no. 4 circuit breaker panel assembly, open ADC (zone D8) circuit breaker. (8) On 161360 AND UP, on no. 2 circuit breaker panel assembly, open ADC (zone B12) circuit breaker.		

Table 1. Cabin Air No/Low Flow In Auto And In Manual (Continued)

Procedure	No	Yes
z. Do substeps below:		
(1) Turn off electrical power (A1-F18AC-LMM-000).		
(2) Open door 13L (A1-F18AC-LMM-010).		
(3) Disconnect 52P-E059 from no. 3 relay panel assembly.		
(4) Does continuity exist from:		
22P-N017 pin 3 to 52P-E059 pin 62		
22P-N017 pin 1 to ground?.....	d	aa
aa. Isolate between no. 3 relay panel assembly wiring, relay 12K-E017, and relay 22K-E039 (A1-F18AC-420-300, WP036 00) and do step ay.....	-	-
ab. Does air flow from left ECS exhaust louver?	ag	ac
ac. Do substeps below:		
(1) Shut down APU (A1-F18AC-LMM-000).		
(2) Remove door 34R (A1-F18AC-LMM-010).		
(3) Disconnect 22P-N014 from secondary ejector valve.		
(4) Turn on electrical power (A1-F18AC-LMM-000).		
(5) Does 28vdc exist at 22P-N014 pin 3 to pin 1 (ground) (normal indication 28vdc not present)?.....	ad	ae
ad. Malfunction is caused by one of the items listed below. Replace one of the items below:		
(1) Secondary heat exchanger (A1-F18AC-410-300, WP031 00) and do step ay.		
(2) Secondary ejector valve (A1-F18AC-410-300, WP032 00) and do step ay.	-	-
ae. Do substeps below:		
(1) Turn off electrical power (A1-F18AC-LMM-000).		
(2) Open door 13L (A1-F18AC-LMM-010).		
(3) Disconnect 52P-E059 from no. 3 relay panel assembly.		
(4) Does continuity exist from:		
22P-N014 pin 3 to 52P-E059 pin 76		
22P-N017 pin 1 to ground?.....	d	af
af. Isolate between no. 3 relay panel assembly wiring, relay 12K-E017, and relay 22K-E038 (A1-F18AC-420-300, WP036 00) and do step ay.....	-	-
ag. Do substeps below:		
(1) On ECS panel assembly, set ECS MODE switch to AUTO.		
(2) Does system flow modulating pressure regulator position indicator indicate near OPEN?.....	ah	ao

Table 1. Cabin Air No/Low Flow In Auto And In Manual (Continued)

Procedure	No	Yes
ah. Do substeps below:		
(1) Remove door 42 (A1-F18AC-LMM-010).		
(2) Disconnect and cap sensing line at compressor protective temperature sensor.		
(3) Does system flow modulating pressure regulator position indicator indicate CLOSED or near CLOSED?	ai	aj
ai. Replace compressor protective temperature sensor (A1-F18AC-410-300, WP038 00) and do step ay.....	-	-
aj. Do substeps below:		
(1) Connect sensing line to compressor protective temperature sensor.		
(2) Disconnect and cap sensing line at turbine protective temperature sensor.		
(3) Does system flow modulating pressure regulator position indicator indicate OPEN?....	al	ak
ak. Replace turbine protective temperature sensor (A1-F18AC-410-300, WP037 00) and do step ay.....	-	-
al. Do substeps below:		
(1) Connect sensing line to turbine protective temperature sensor.		
(2) Disconnect turbine protective temperature sensor and compressor protective temperature sensor sensing line at system flow modulating pressure regulator.		
(3) Cap port on system flow modulating pressure regulator.		
(4) Does system flow modulating pressure regulator position indicator indicate OPEN?.....	an	am
am. Isolate and repair leaking line to turbine protective temperature sensor or compressor protective temperature sensor (A1-F18AC-PIM-000) and do step ay.....	-	-
an. Do substeps below:		
(1) Shut down APU (A1-F18AC-LMM-000).		
(2) In door 129R, disconnect 22P-R015A from system flow modulating pressure regulator (regulator).		
(3) Measure resistance from 22L-R015 receptacle J1 pin 1 to pin 3.		
(5) Is resistance 69 to 90 ohms?.....	j	r
ao. Does cabin flow valve position indicator indicate CLOSED or near CLOSED?.....	ap	ar
ap. Do substeps below:		
(1) Remove door 27 (A1-F18AC-LMM-010).		
(2) Does avionics ram air valve position indicator indicate OPEN?.....	aq	as
aq. Isolate and repair leaking or obstructed duct to cabin (A1-F18AC-PIM-000) and do step ay.....	-	-

Table 1. Cabin Air No/Low Flow In Auto And In Manual (Continued)

Procedure	No	Yes
ar. Do substeps below:		
(1) Shut down APU (A1-F18AC-LMM-000).		
(2) Disconnect 22P-R006 from cabin flow valve (valve).		
(3) Measure resistance from 22L-R006 valve receptacle pin 1 to pin 3.		
(4) Is resistance 69 to 90 ohms?	o	r
as. Do substeps below:		
(1) In left main wheelwell, connect ACS pressure indicator test (0-30 psig) to ECS test port no. (III).		
(2) Test muscle pressure from flow/temperature limiting anti-ice modulating valve (valve) at test port III as listed below:		
On aircraft with valve P/N 979452-3-1 muscle pressure is 15 ±1 psig		
On aircraft with valve P/N 979452-5-2 muscle pressure is 16 ±0.5 psig		
On aircraft with valve P/N 979452-7-1 muscle pressure is 16 ±0.5 psig		
Is muscle pressure correct?	au	av
at. Isolate and replace or repair leaking or damaged muscle pressure line (A1-F18AC-PIM-000) and do step ay	-	-
au. Do substeps below:		
(1) Inspect muscle pressure line between ram air valve and ram air valve servo.		
(2) Is muscle pressure line leaking?	av	at
av. Do substeps below:		
(1) Remove door 27 (A1-F18AC-LMM-010).		
(2) Remove avionics ram air valve (A1-F18AC-410-300, WP062 00).		
(3) Is valve stuck, binding or jammed in OPEN position?	ax	aw
aw. Replace avionics ram air valve (A1-F18AC-410-300, WP062 00) and do step ay.....	-	-
ax. Replace avionics ram air valve servo (A1-F18AC-410-300, WP064 00) and do step ay.....	-	-
ay. If disconnected, removed, or opened during this procedure, make sure the items listed below are connected, installed, or closed:		
(1) Shut down APU		
(2) Sensing lines		
(3) ECS test port no. (III)		
(4) Avionics ram air valve		
(5) 22P-D002A		
(6) 22P-D002B		

Table 1. Cabin Air No/Low Flow In Auto And In Manual (Continued)

Procedure	No	Yes
(7) 22P-E003		
(8) 22P-E004		
(9) 52P-E059		
(10) 22P-R015A		
(11) 22P-R006		
(12) 22P-N017		
(13) 22P-N014		
(14) Door 10R		
(15) Door 33		
(16) Door 129R		
(17) Door 13L		
(18) Door 27		
(19) Door 34R		
(19) Door 39R		
(20) Door 42		
(21) ECS CONT circuit breaker	-	-

ORGANIZATIONAL MAINTENANCE

FAULT ISOLATION MANUAL

TROUBLESHOOTING PROCEDURE

Reference Material

Line Maintenance Procedures	A1-F18AC-LMM-000
Line Maintenance Access Doors.....	A1-F18AC-LMM-010
Environmental Control Systems.....	A1-F18AC-410-500
Air Cycle Air Conditioning System.....	WP007 00
Cabin Cooling and Defog System.....	WP008 00
Avionics Cooling System	WP009 00
Vent Suit System.....	WP012 00
Windshield Anti-Ice and Rain Removal System	WP013 00
Fault Isolation Manual	A1-F18AC-FIM-000
Troubleshooting Procedure	WP056 00

Alphabetical Index

Subject	Page No.
Table 1	2

Record of Applicable Technical Directives

None

Table 1. Cyclic Flow To Cabin**Support Equipment Required****NOTE**

Alternate item type designations or part numbers are listed in parentheses.

Part Number or Type Designation	Nomenclature
260-6XLP	Multimeter
(AN/USM-311)	
74D410141-1001	Test Set, ACS Pressure Indicator

Materials Required

None

NOTE

Air Cycle Air Conditioning System Schematic (A1-F18AC-410-500, WP007 00), Cabin Cooling and Defog System Schematic (A1-F18AC-410-500, WP008 00), Avionics Cooling System Schematic - Except Cockpit (A1-F18AC-410-500, WP009 00), Vent Suit System Schematic (A1-F18AC-410-500, WP012 00), and Windshield Anti-Ice and Rain Removal System Schematic (A1-F18AC-410-500, WP013 00) may be used as aids when doing this procedure.

For component locator, refer to A1-F18AC-410-500, WP007 00, WP008 00, WP009 00, WP012 00, and WP013 00.

Table 1. Cyclic Flow To Cabin (Continued)


Malfunction is caused by one of the items below:		
ACS Temperature/Flow Controller Aircraft Wiring Anti-Ice Add Heat Valve Avionics Air Flow/Temperature Sensor Avionics Ram Air Servo Avionics Ram Air Valve Cabin Air Overtemperature Sensor Cabin Airflow/Temperature Sensor Cabin Pressurization Defog Control Assembly ECS Panel Assembly Flow/Temperature Limiting Anti-Ice Modulating Valve Muscle Pressure Line No. 3 Relay Panel Assembly System Flow Modulating Pressure Regulator Vent Suit Temperature Sensor Warm Air Overtemperature Sensor Warm Air Temperature Control Valve Warm Air Temperature Sensor Water Extractor Water Spray Nozzle Water Spray Nozzle Filter Assembly		
Procedure	No	Yes
<div style="text-align: center;">  </div> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use RX1 scale.</p>		

Table 1. Cyclic Flow To Cabin (Continued)

Procedure	No	Yes
<p style="text-align: center;">NOTE</p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"> 1. Pin to pin test per procedural step. 2. Shorts to ground. 3. Shorts between surrounding pins on connectors. 4. Shorts between shield and conductors. 5. Shield continuity. <p>When testing for resistance, also test for shorts to ground.</p> <p>WP004 00, table 2 of the A1-F18AC-410-200 manual can be used to identify both a faulty Environmental Control System (ECS), and the component most likely to have caused the faulty condition. Refer to this table to reduce maintenance time, or if problems are encountered during troubleshooting.</p> <p>a. Do substeps below:</p> <p>(1) Start APU and operate in ECS mode (A1-F18AC-LMM-000).</p>		

Table 1. Cyclic Flow To Cabin (Continued)

Procedure	No	Yes
(2) On GND PWR control panel assembly, set and hold 2 switch to B ON for three seconds.		
(3) On ECS panel assembly, set SUIT/CABIN TEMP control to full COLD.		
(4) At ECS louvers, does cabin airflow cycle?	b	n
b. Do substeps below:		
(1) On ECS panel assembly, set SUIT/CABIN TEMP control to full HOT.		
(2) At ECS louvers, does cabin airflow cycle?	c	d
c. Isolate and repair cabin pressurization system (A1-F18AC-410-500, WP010 00) and do step bk.	-	-
d. Do substeps below:		
(1) In nose wheelwell, disconnect and cap sensing line at cabin air overtemperature sensor.		
(2) On ECS panel assembly, set SUIT/CABIN TEMP to full HOT.		
(3) Does cabin add heat valve cycle?	e	f
e. Replace cabin air overtemperature sensor (A1-F18AC-410-300, WP047 00) and do step bk. .	-	-
f. Do substeps below:		
(1) Shut down APU (A1-F18AC-LMM-000).		
(2) Open door 10R (A1-F18AC-LMM-010).		
(3) Disconnect 22P-D002B from ACS temperature/flow controller.		
(4) Do the resistance tests below:		
22P-D002B pin 42 to pin 43 (value per temperature/resistance chart 1, WP056 00)		
22P-D002B pin 50 to pin 55 (value per temperature/resistance chart 2, WP056 00)		
22P-D002B pin 50 to pin 54 (value per temperature/resistance chart 3, WP056 00)		
22P-D002B pin 49 to pin 53 (35 to 50 ohms)		
Are resistance values correct?	g	j

Table 1. Cyclic Flow To Cabin (Continued)

Procedure	No	Yes
g. Do substeps below:		
(1) Disconnect 22P-E003 from cabin airflow/temperature sensor (sensor) (nose wheel-well).		
(2) Do the resistance tests below:		
22A-E003 sensor receptacle pin 2 to pin 10 (value per temperature/resistance chart 1, WP056 00)		
22A-E003 sensor receptacle pin 3 to pin 4 (value per temperature/resistance chart 2, WP056 00)		
22A-E003 sensor receptacle pin 3 to pin 11 (value per temperature/resistance chart 3, WP056 00)		
22A-E003 sensor receptacle pin 5 to pin 7 (35 to 50 ohms)		
Are resistance values correct?	h	i
h. Replace cabin airflow/temperature sensor (A1-F18AC-410-300, WP046 00) and do step bk..	-	-
i. Isolate defective aircraft wiring (A1-F18A()-WDM-000) and do do step bk	-	-
j. Do substeps below:		
(1) Disconnect 22P-D002A from ACS temperature/flow controller.		
(2) On ECS panel assembly, set SUIT/CABIN TEMP control to midposition.		
(3) Do resistance tests below:		
22P-D002A pin 43 to pin 54 (400 to 600 ohms)		
22P-D002A pin 43 to pin 50 (400 to 600 ohms)		
22P-D002A pin 50 to pin 54 (900 to 1100 ohms)		
Are resistance values correct?	l	k
k. Replace ACS temperature/flow controller (A1-F18AC-410-300, WP026 00) and do step bk	-	-
l. Do substeps below:		
(1) Remove ECS panel assembly (A1-F18AC-410-300, WP004 00).		
(2) On ECS panel assembly, set SUIT/CABIN TEMP control to midposition.		

Table 1. Cyclic Flow To Cabin (Continued)

Procedure	No	Yes
(3) Do resistance tests below: 52J-J078 pin 15 to pin 23 (400 to 600 ohms) 52J-J078 pin 23 to pin 31 (400 to 600 ohms) 52J-J078 pin 15 to pin 31 (900 to 1100 ohms)		
Are resistance values correct?	m	i
m. Replace ECS panel assembly (A1-F18AC-410-300, WP004 00) and do step bk.	-	-
n. Are there water droplets coming from ECS cockpit louvers?	v	o
o. Do substeps below: (1) Shut down APU (A1-F18AC-LMM-000). (2) Remove water spray nozzle (A1-F18AC-410-300, WP041 00). (3) Start APU and operate in ECS mode (A1-F18AC-LMM-000). (4) Is there water draining from tube assembly?	q	p
p. Replace water spray nozzle (A1-F18AC-410-300, WP041 00) and do step bk	-	-
q. Do substeps below: (1) Shut down APU (A1-F18AC-LMM-000). (2) Remove water spray nozzle filter (A1-F18AC-410-300, WP040 00). (3) Start APU and operate in ECS mode (A1-F18AC-LMM-000). (4) Is there water draining from upstream tube assembly?	s	r
r. Replace water spray nozzle filter (A1-F18AC-410-300, WP040 00) and do step bk	-	-
s. Do substeps below: (1) Shut down APU (A1-F18AC-LMM-000). (2) Disconnect tube assembly bottom of water extractor. (3) Start APU and operate in ECS mode (A1-F18AC-LMM-000). (4) Is there water draining from water extractor?	t	u
t. Replace water extractor (A1-F18AC-410-300, WP040 00) and do step bk	-	-

Table 1. Cyclic Flow To Cabin (Continued)

Procedure	No	Yes
u. Isolate and repair or replace tube assembly (A1-F18AC-PIM-000) and do step bk	-	-
v. Do substeps below:		
(1) Remove door 27 (A1-F18AC-LMM-010).		
(2) Observe position indicator on avionics ram air valve. Is valve open?	ab	w
w. Do substeps below:		
(1) On avionics ram air valve, disconnect muscle pressure line.		
(2) Does air flow from muscle pressure line?	y	x
x. Replace avionics ram air valve (A1-F18AC-410-300, WP062 00) and do step bk	-	-
y. Do substeps below:		
(1) On avionics ram air servo, disconnect muscle pressure line to avionics ram air valve.		
(2) Does air flow from avionics ram air servo port?	z	aa
z. Replace avionics ram air servo (A1-F18AC-410-300, WP064 00) and do step bk	-	-
aa. Replace muscle pressure line between avionics ram air servo and avionics ram air valve (A1-F18AC-PIM-000) and do step bk	-	-
ab. Do substeps below:		
(1) Open door 14L (A1-F18AC-LMM-010).		
(2) Connect ACS pressure indicator test set (0 to 50 inch H ₂ O pressure gauge) to ECS test port no. IX.		
(3) At ECS test port no. IX, does avionics airflow cycle?	ac	am
ac. Do substeps below:		
(1) On ECS panel assembly, set ECS MODE switch to MAN.		
(2) At ECS test port no. IX, does avionics airflow cycle?	ad	ah
ad. Do substeps below:		
(1) Shut down APU (A1-F18AC-LMM-000).		

Table 1. Cyclic Flow To Cabin (Continued)

Procedure	No	Yes
(2) Open door 10R (A1-F18AC-LMM-010). (3) Disconnect 22P-D002B from ACS temperature/flow controller. (4) Do the resistance tests below: 22P-D002B pin 42 to pin 43 (value per temperature/resistance chart 1, WP056 00) 22P-D002B pin 50 to pin 55 (value per temperature/resistance chart 2, WP056 00) 22P-D002B pin 50 to pin 54 (value per temperature/resistance chart 3, WP056 00) 22P-D002B pin 49 to pin 53 (35 to 50 ohms) Are resistance values correct?	g	ae
ae. Do substeps below:		
(1) Open door 13L (A1-F18AC-LMM-010). (2) Disconnect 52P-E059 from no. 3 relay panel assembly. (3) Does continuity exist from 52J-E059 pin 25 to pin 46?	af	ag
af. Isolate between no. 3 relay panel assembly wiring and relay 22K-E145 (A1-F18AC-420-300, WP036 00) and do step bk.	-	-
ag. Do substeps below:		
(1) Disconnect 22P-D002A from ACS temperature/flow controller. (2) Does continuity exist from 22P-D002A pin 41 to 52P-E059 pin 25?	i	k
ah. Do substeps below:		
(1) Shut down APU (A1-F18AC-LMM-000). (2) Open door 10R (A1-F18AC-LMM-010). (3) Disconnect 22P-D002A from ACS temperature/flow controller. (4) Do resistance tests below: 22P-D002A pin 30 to pin 37 (275 to 475 ohms) 22P-D002A pin 37 to pin 44 (275 to 475 ohms) 22P-D002A pin 30 to pin 44 (400 to 600 ohms) Are resistance values correct?	ai	aj

Table 1. Cyclic Flow To Cabin (Continued)

Procedure	No	Yes
ai. Do substeps below:		
(1) Remove ECS panel assembly (A1-F18AC-410-300, WP004 00).		
(2) On ECS panel assembly, set SUIT/CABIN TEMP control to midposition.		
(3) Do resistance tests below:		
52J-J078 pin 38 to pin 50 (275 to 475 ohms)		
52J-J078 pin 38 to pin 45 (275 to 475 ohms)		
52J-J078 pin 45 to pin 50 (400 to 600 ohms)		
Are resistance values correct?	m	i
aj. Does continuity exist from 22P-D002A pin 33 to pin 34?	k	ak
ak. Do substeps below:		
(1) Remove defog control assembly (A1-F18AC-410-300, WP054 00).		
(2) Does continuity exist from 22S-J026 receptacle pin 1 to pin 3?	i	al
al. Replace defog control assembly (A1-F18AC-410-300, WP054 00) and do step bk.....	-	-
am. Do substeps below:		
(1) Shut down APU (A1-F18AC-LMM-000).		
(2) Open door 10R (A1-F18AC-LMM-010).		
(3) On 161353 THRU 161359, on no. 2 circuit breaker panel assembly, open ECS CONT (zone D13) circuit breaker, or on 161360 AND UP, on no. 4 circuit breaker panel assembly, open ECS CONT (zone C6) circuit breaker.		
(4) Disconnect 22P-D002A from ACS temperature/flow controller.		
(5) Measure resistance from 22P-D002A pin 18 to pin 26.		
(6) Is resistance 69 to 90 ohms?	an	ar
an. Do substeps below:		
(1) Remove door 129R (A1-F18AC-LMM-010).		
(2) Disconnect 22P-R015A from system flow modulating pressure regulator (regulator).		
(3) Measure resistance from 22L-R015 receptacle J1 pin 1 to pin 3.		

Table 1. Cyclic Flow To Cabin (Continued)

Procedure	No	Yes
(4) Is resistance 69 to 90 ohms?	ao	ap
ao. Replace system flow modulating pressure regulator (A1-F18AC-410-300, WP035 00) and do step bk.	-	-
ap. Do substeps below:		
(1) Open door 13L (A1-F18AC-LMM-010).		
(2) Disconnect 52P-E059 from no. 3 relay panel assembly.		
(3) Does continuity exist from 52J-E059 pin 34 to pin 36?	af	aq
aq. Does continuity exist from:		
22P-D002A pin 26 to 22P-R015A pin 3		
22P-D002A pin 18 to 52P-E059 pin 36		
22P-R015A pin 1 to 52P-E059 pin 34?	i	k
ar. Do substeps below:		
(1) Measure resistance from 22P-D002A pin 19 to pin 26.		
(2) Is resistance 69 to 90 ohms?	as	au
as. Do substeps below:		
(1) Remove door 36 (A1-F18AC-LMM-010).		
(2) Disconnect 22P-R016 from anti-ice add heat valve (valve).		
(3) Measure resistance from 22L-R016 valve receptacle pin 1 to pin 3.		
(4) Is resistance 69 to 90 ohms?	at	i
at. Replace anti-ice add heat valve (A1-F18AC-410-300, WP042 00) and do step bk.	-	-
au. Do substeps below:		
(1) Disconnect 22P-D002B from ACS temperature/flow controller.		

Table 1. Cyclic Flow To Cabin (Continued)

Procedure	No	Yes
<p>(2) Do resistance tests below:</p> <p>22P-D002B pin 12 to pin 13 (value per temperature/resistance chart 1, WP056 00)</p> <p>22P-D002B pin 2 to pin 7 (value per temperature/resistance chart 4, WP056 00)</p> <p>22P-D002B pin 3 to pin 7 (value per temperature/resistance chart 5, WP056 00)</p> <p>22P-D002B pin 1 to pin 6 (35 to 50 ohms)</p> <p>Are resistance values correct?</p>	av	ax
<p>av. Do substeps below:</p> <p>(1) Remove door 33 (A1-F18AC-LMM-010).</p> <p>(2) Disconnect 22P-E004 from avionics air flow/temperature sensor (sensor).</p> <p>(3) Do the resistance tests below:</p> <p>22A-E004 sensor receptacle pin 2 to pin 10 (value per temperature/resistance chart 1, WP056 00)</p> <p>22A-E004 sensor receptacle pin 3 to pin 11 (value per temperature/resistance chart 4, WP056 00)</p> <p>22A-E004 sensor receptacle pin 3 to pin 4 (value per temperature/resistance chart 5, WP056 00)</p> <p>22A-E004 sensor receptacle pin 5 to pin 7 (35 to 50 ohms)</p> <p>Are resistance values correct?</p>	aw	i
<p>aw. Replace avionics air flow/temperature sensor (A1-F18AC-410-300, WP060 00) and do step bk.....</p>	-	-
<p>ax. Do the resistance test below:</p> <p>22P-D002B pin 15 to pin 16 (value per temperature/resistance chart 1, WP056 00)</p> <p>Is the resistance value correct?</p>	ay	ba
<p>ay. Do substeps below:</p> <p>(1) Remove door 27 (A1-F18AC-LMM-010).</p> <p>(2) Disconnect 22P-P005 from vent suit temperature sensor (sensor).</p> <p>(3) Measure resistance from 22A-P005 sensor receptacle pin 2 to pin 4 (temperature/resistance chart 1, WP056 00).</p> <p>Is resistance value correct?</p>	az	i

Table 1. Cyclic Flow To Cabin (Continued)

Procedure	No	Yes
az. Replace vent suit temperature sensor (A1-F18AC-410-300, WP101 00) and do step bk	-	-
ba. Do substeps below:		
(1) On 161353 THRU 161359, on no. 2 circuit breaker panel assembly, close ECS CONT (zone D13) circuit breaker, or on 161360 AND UP, on no. 4 circuit breaker panel assembly, close ECS CONT (zone C6) circuit breaker.		
(2) Connect 22P-D002A and 22P-D002B to ACS temperature/flow controller.		
(3) Remove door 34R (A1-F18AC-LMM-010).		
(4) Start APU and operate in ECS mode (A1-F18AC-LMM-000).		
(5) Does warm air temperature control valve position indicator indicate cycling?.....	bb	bh
bb. Do substeps below:		
(1) Remove door 27 (A1-F18AC-LMM-010).		
(2) Is flow/temperature limiting anti-ice modulating valve cycling?.....	bc	be
bc. Is muscle pressure line to the avionics flow valve leaking or damaged?	k	bd
bd. Replace or repair leaking or damaged line (A1-F18AC-PIM-000) and do step bk	-	-
be. Do substeps below:		
(1) Disconnect and cap sensing line at warm air overtemperature sensor.		
(2) Is flow/temperature anti-ice modulating valve cycling?.....	bf	bg
bf. Replace warm air overtemperature sensor (A1-F18AC-410-300, WP111 00) and do step bk	-	-
bg. Replace flow/temperature limiting anti-ice modulating valve (A1-F18AC-410-300, WP110 00) and do step bk	-	-
bh. Do substeps below:		
(1) Remove door 27 (A1-F18AC-LMM-010).		
(2) Disconnect and cap sensing line at warm air temperature sensor.		

Table 1. Cyclic Flow To Cabin (Continued)

Procedure	No	Yes
(3) Is warm air temperature control valve cycling?	bi	bj
bi. Replace warm air temperature sensor (A1-F18AC-410-300, WP108 00) and do step bk	-	-
bj. Replace warm air temperature control valve (A1-F18AC-410-300, WP107 00) and do step bk	-	-
bk. If disconnected, removed, or opened during this procedure, make sure the items listed below are connected, installed, or closed:		
(1) Shut down APU		
(2) Sense lines		
(3) ECS panel assembly		
(4) Defog control assembly		
(5) Remove ACS pressure indicator test set		
(6) 22P-D002A		
(7) 22P-D002B		
(8) 22P-E003		
(9) 22P-R016		
(10) 52P-E059		
(11) 22P-E004		
(12) 22P-R015A		
(13) 22P-P005		
(14) Water spray nozzle		
(15) Water spray nozzle filter		
(16) Muscle pressure lines		
(17) Door 13L		
(18) Door 14L		
(19) Door 27		
(20) Door 33		

Table 1. Cyclic Flow To Cabin (Continued)

Procedure	No	Yes
(21) Door 129R		
(22) Door 34R		
(23) Door 10R		
(24) ECS CONT circuit breaker	-	-

ORGANIZATIONAL MAINTENANCE

FAULT ISOLATION MANUAL

TROUBLESHOOTING PROCEDURE

Reference Material

Line Maintenance Procedures	A1-F18AC-LMM-000
Line Maintenance Access Doors.....	A1-F18AC-LMM-010
Environmental Control Systems.....	A1-F18AC-410-500
Vent Suit Systems.....	WP012 00

Alphabetical Index

Subject	Page No.
Table 1.....	1

Record of Applicable Technical Directives

None

Table 1. Vent Suit Too Hot, No Change in MAN

Support Equipment Required

NOTE

Alternate item type designations or part numbers are listed in parentheses.

Part Number or Type Designation	Nomenclature
260-6XLP (AN/USM-311)	Multimeter

Table 1. Vent Suit Too Hot, No Change in MAN (Continued)


<p align="center">Materials Required</p> <p align="center">None</p> <p align="center">NOTE</p> <p>Vent Suit System Schematic (A1-F18AC-410-500, WP012 00) may be used as an aid when doing this procedure.</p> <p>For component locator, refer to A1-F18AC-410-500, WP012 00.</p> <p>Malfunction is caused by one of the items below:</p> <p>ACS Temperature/Flow Controller Aircraft Wiring No. 3 Relay Panel Assembly Vent Suit Temperature Valve</p>		
Procedure	No	Yes
<p align="center"></p> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale.</p> <p>Pin to pin tests that do not go through switches/relay contacts may use RX1 scale.</p> <p align="center">NOTE</p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"> 1. Pin to pin test per procedural step. 2. Shorts to ground. 3. Shorts between surrounding pins on connectors. 4. Shorts between shield and conductors. 5. Shield continuity. <p>When testing for resistance also test for shorts to ground.</p> <p>a. Do substeps below:</p> <ol style="list-style-type: none"> (1) Make sure electrical power is off (A1-F18AC-LMM-000). (2) Open door 10R (A1-F18AC-LMM-010). (3) Disconnect 22P-D002A from ACS temperature/flow controller. 		

Table 1. Vent Suit Too Hot, No Change in MAN (Continued)

Procedure	No	Yes
(4) Measure resistance from 22P-D002A pin 4 to pin 26.		
(5) Is resistance 69 to 90 ohms?	b	g
b. Do substeps below:		
(1) Remove door 27 (A1-F18AC-LMM-010).		
(2) Disconnect 22P-P012 from vent suit temperature valve.		
(3) Measure resistance from 22L-P012 receptacle pin 1 to pin 3.		
(4) Is resistance 69 to 90 ohms?	c	d
c. Replace vent suit temperature valve (A1-F18AC-410-300, WP100 00) and do step i.	-	-
d. Do substeps below:		
(1) Open door 13L (A1-F18AC-LMM-010).		
(2) Disconnect 52P-E059 from no. 3 relay panel assembly.		
(3) Does continuity exist from 52J-E059 pin 106 to pin 116?	e	f
e. Isolate between no. 3 relay panel assembly wiring and 22K-E145 relay (A1-F18AC-420-300, WP035 00) and do step i.	-	-
f. Isolate defective aircraft wiring (A1-F18A()-WDM-000) and do step i.	-	-
g. Do substeps below:		
(1) Remove door 27 (A1-F18AC-LMM-010).		
(2) Is valve position indicator on vent suit temperature valve in the OPEN position?	h	c
h. Replace ACS temperature/flow controller (A1-F18AC-410-300, WP026 00) and do step i.	-	-
i. If disconnected, removed, or opened during this procedure, make sure the items listed below are connected, installed, or closed:		
(1) 22P-D002A		
(2) 22P-P012		
(3) 52P-E059		

Table 1. Vent Suit Too Hot, No Change in MAN (Continued)

Procedure	No	Yes
(4) Door 27		
(5) Door 13L		
(6) Door 10R.....	-	-

ORGANIZATIONAL MAINTENANCE

FAULT ISOLATION MANUAL

TROUBLESHOOTING PROCEDURE

Reference Material

Line Maintenance Procedures	A1-F18AC-LMM-000
Line Maintenance Access Doors.....	A1-F18AC-LMM-010
Environmental Control Systems.....	A1-F18AC-410-500
Vent Suit System.....	WP012 00

Alphabetical Index

Subject	Page No.
Table 1.....	1

Record of Applicable Technical Directives

None

Table 1. Vent Suit Too Cold, No Change in MAN

Support Equipment Required	
NOTE	
Alternate item type designations or part numbers are listed in parentheses.	
Part Number or Type Designation	Nomenclature
260-6XLP (AN/USM-311)	Multimeter

Table 1. Vent Suit Too Cold, No Change in MAN (Continued)


<p style="text-align: center;">Materials Required</p> <p style="text-align: center;">None</p> <p style="text-align: center;">NOTE</p> <p>Vent Suit System Schematic (A1-F18AC-410-500, WP012 00) may be used as an aid when doing this procedure.</p> <p>For component locator, refer to A1-F18AC-410-500, WP012 00.</p> <p>Malfunction is caused by one of the items below:</p> <p>Aircraft Wiring Muscle Pressure Line No. 3 Relay Panel Assembly Vent Suit Overtemperature Sensor Vent Suit Temperature Valve</p>		
Procedure	No	Yes
<p style="text-align: center;"></p> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale.</p> <p>Pin to pin tests that do not go through switches/relay contacts may use RX1 scale.</p> <p style="text-align: center;">NOTE</p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"> 1. Pin to pin test per procedural step. 2. Shorts to ground. 3. Shorts between surrounding pins on connectors. 4. Shorts between shield and conductors. 5. Shield continuity. <p>When testing for resistance also test for shorts to ground.</p> <p>a. Do substeps below:</p> <ol style="list-style-type: none"> (1) Make sure electrical power is off (A1-F18AC-LMM-000). (2) Open door 10R (A1-F18AC-LMM-010). (3) Disconnect 22P-D002A from ACS temperature/flow controller. 		

Table 1. Vent Suit Too Cold, No Change in MAN (Continued)

Procedure	No	Yes
(4) Measure resistance from 22P-D002A pin 4 to pin 26.		
(5) Is resistance 69 to 90 ohms?	b	g
b. Do substeps below:		
(1) Remove door 27 (A1-F18AC-LMM-010).		
(2) Disconnect 22P-P012 from vent suit temperature valve.		
(3) Measure resistance from 22L-P012 receptacle pin 1 to pin 3.		
(4) Is resistance 69 to 90 ohms?	c	d
c. Replace vent suit temperature valve (A1-F18AC-410-300, WP100 00) and do step 1.	-	-
d. Do substeps below:		
(1) Open door 13L (A1-F18AC-LMM-010).		
(2) Disconnect 52P-E059 from no. 3 relay panel assembly.		
(3) Does continuity exist from 52J-E059 pin 116 to pin 106?	e	f
e. Isolate between no. 3 relay panel assembly wiring and 22K-E145 relay (A1-F18AC-420-300, WP035 00) and do step 1.	-	-
f. Isolate defective aircraft wiring (A1-F18A()-WDM-000) and do step 1.	-	-
g. Do substeps below:		
(1) Remove door 27 (A1-F18AC-LMM-010).		
(2) Disconnect and cap sensing line at vent suit overtemperature sensor.		
(3) Start APU and operate in ECS mode (A1-F18AC-LMM-000).		
(4) On ECS panel assembly, set SUIT/CABIN TEMP control to full HOT.		
(5) Does valve position indicator on vent suit temperature valve indicate OPEN?	i	h
h. Replace vent suit overtemperature sensor (A1-F18AC-410-300, WP102 00) and do step 1.	-	-

Table 1. Vent Suit Too Cold, No Change in MAN (Continued)

Procedure	No	Yes
i. Do substeps below:		
(1) Disconnect and cap sensing line to vent suit overtemperature sensor at vent suit temperature valve.		
(2) Does vent suit temperature valve position indicator indicate OPEN?.....	j	h
j. Inspect muscle pressure line to vent suit temperature valve for leakage. Is line leaking?.....	c	k
k. Isolate and repair or replace muscle pressure line (A1-F18AC-PIM-000) and do step l.....	-	-
l. If disconnected, removed, or opened during this procedure, make sure the items listed below are connected, installed, or closed:		
(1) Shut down APU		
(2) Vent suit overtemperature sensor sensing line		
(3) 22P-D002A		
(4) 22P-P012		
(5) 52P-E059		
(6) Door 10R		
(7) Door 27		
(8) Door 13L.....	-	-

ORGANIZATIONAL MAINTENANCE

FAULT ISOLATION MANUAL

TROUBLESHOOTING PROCEDURE

Reference Material

Line Maintenance Procedures	A1-F18AC-LMM-000
Line Maintenance Access Doors.....	A1-F18AC-LMM-010
Environmental Control Systems.....	A1-F18AC-410-500
Cabin Pressurization System	WP010 00

Alphabetical Index

Subject	Page No.
Table 1.....	1

Record of Applicable Technical Directives

None

Table 1. Cabin Pressure Will Not Dump

Support Equipment Required	
NOTE	
Alternate item type designations or part numbers are listed in parentheses.	
Part Number or Type Designation	Nomenclature
260-6XLP (AN/USM-311)	Multimeter

Table 1. Cabin Pressure Will Not Dump (Continued)


<p align="center">Materials Required</p> <p align="center">None</p> <p align="center">NOTE</p> <p>Cabin Pressurization System Schematic (A1-F18AC-410-500, WP010 00) may be used as an aid when doing this procedure.</p> <p>For component locator, refer to A1-F18AC-410-500, WP010 00.</p> <p>Malfunction is caused by one of the items below:</p> <p>Aircraft Cabin Air Pressure Emergency Relief Valve Aircraft Wiring ECS Panel Assembly No. 5 Circuit Breaker Panel Assembly Sense Tube</p>		
Procedure	No	Yes
<p align="center"></p> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use RX1 scale.</p> <p align="center">NOTE</p> <p>The question used in logic tree "Does continuity exist" means to test for the items listed below:</p> <ol style="list-style-type: none"> 1. Pin to pin test per procedural step. 2. Shorts to ground. 3. Shorts between surrounding pins on connectors. 4. Shorts between shield and conductors. 5. Shield continuity. <p>a. Do substeps below:</p> <ol style="list-style-type: none"> (1) Apply electrical power (A1-F18AC-LMM-000). (2) On ECS panel assembly, set CABIN PRESS switch to DUMP. (3) Does aircraft cabin air pressure emergency relief valve solenoid energize? 		
	b	k

Table 1. Cabin Pressure Will Not Dump (Continued)

Procedure	No	Yes
b. Do substeps below: (1) Turn off electrical power (A1-F18AC-LMM-000). (2) On F/A-18A AND F/A-18C: (a) Remove upper equipment bay EMI screen (A1-F18AC-LMM-000). (b) Disconnect 22P-K102 from aircraft cabin air pressure emergency relief valve. (3) F/A-18B AND F/A-18D: (a) Remove right internal door CPZ (A1-F18AC-LMM-010). (b) Disconnect 22P-L102 from aircraft cabin air pressure emergency relief valve. (4) Turn on electrical power (A1-F18AC-LMM-000). (5) Does 28vdc exist from: On F/A-18A AND F/A-18C, 22P-K102 pin 1 and aircraft ground. On F/A-18B AND F/A-18D, 22P-L102 pin 1 and aircraft ground?	c	i
c. Do substeps below: (1) Turn off electrical power (A1-F18AC-LMM-000). (2) Remove ECS panel assembly (A1-F18AC-410-300, WP004 00). (3) On ECS panel assembly, does continuity exist from 52J-J078 pin 10 to pin 33 with CABIN PRESS switch set to DUMP?	d	e
d. Replace ECS panel assembly (A1-F18AC-410-300, WP004 00) and do step m	-	-
e. Do substeps below: (1) Turn on electrical power (A1-F18AC-LMM-000). (2) Does 28vdc exist at 52P-J078 pin 33?	f	g
f. Do substeps below: (1) Turn off electrical power (A1-F18AC-LMM-000). (2) Open door 10R (A1-F18AC-LMM-010). (3) Disconnect 52P-D092C from no. 5 circuit breaker panel assembly.		

Table 1. Cabin Pressure Will Not Dump (Continued)

Procedure	No	Yes
(4) Does continuity exist from 52P-J078 pin 33 to 52P-D092C pin 33?.....	g	h
g. Isolate defective aircraft wiring (A1-F18A()-WDM-000) and do step m.....	-	-
h. Isolate between no. 5 circuit breaker panel assembly wiring and circuit breaker 22CBD104 (A1-F18AC-420-300, WP026 00) and do step m.	-	-
i. Do substeps below:		
(1) Turn off electrical power (A1-F18AC-LMM-000).		
(2) Does continuity exist from:		
On F/A-18A AND F/A-18C, 22P-K102 pin 2 to aircraft ground.		
On F/A-18B AND F/A-18D, 22P-L102 pin 2 to aircraft ground?	g	j
j. Replace aircraft cabin air pressure emergency relief valve (A1-F18AC-410-300, WP090 00) and do step m.....	-	-
k. Do substeps below:		
(1) Disconnect tube assemblies connected to aircraft cabin air pressure emergency relief valve.		
(2) Are tube assemblies damaged or obstructed?	j	l
l. Replace or repair damaged tube assembly (A1-F18AC-PIM-000) and do step m.....	-	-
m. If disconnected, removed, or opened during this procedure, make sure the items listed below are connected, installed, or closed:		
(1) 22P-K102		
(2) 52P-D092C		
(3) 22P-L102		
(4) ECS panel assembly		
(5) Internal door CPZ		
(6) Upper equipment bay EMI screen		
(7) Door 10R		

ORGANIZATIONAL MAINTENANCE

FAULT ISOLATION MANUAL

TROUBLESHOOTING PROCEDURE

Reference Material

Line Maintenance Procedures	A1-F18AC-LMM-000
Line Maintenance Access Doors.....	A1-F18AC-LMM-010
Environmental Controls Systems.....	A1-F18AC-410-500
Component Locators	WP004 00

Alphabetical Index

Subject	Page No.
Table 1.....	1

Record of Applicable Technical Directives

None

Table 1. Bleed Air Source, No Flow/Left Side

Support Equipment Required

NOTE

Alternate item type designations or part numbers are listed in parentheses.

Part Number or
Type Designation
260-6XLP
(AN/USM-311)

Nomenclature
Multimeter

Table 1. Bleed Air Source, No Flow/Left Side (Continued)


<p align="center">Materials Required</p> <p align="center">None</p> <p align="center">NOTE</p> <p>Bleed Air System Schematic (A1-F18AC-410-500, WP005 00) may be used as an aid when doing this procedure.</p> <p>For component locator, refer to A1-F18AC-410-500, WP004 00.</p> <p>Malfunction is caused by one of the items below:</p> <p>Aircraft Wiring ECS Panel Assembly Left Engine Bleed Air Pressure Regulating and Shutoff Valve No. 4 Relay Panel Assembly No. 8 Circuit Beaker/Relay Panel Assembly</p>		
Procedure	No	Yes
<p align="center"></p> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use RX1 scale.</p> <p>To prevent damage to aircraft wiring or equipment, make sure multimeter leads/jumper wires are installed on correct pins. When electrical power is off, 24vdc battery voltage exists on some pins of connectors listed below:</p> <p>52P-C159G</p> <p align="center">NOTE</p> <p>The question used in logic tree "Does continuity exist" means to test for the items listed below:</p> <ol style="list-style-type: none"> 1. Pin to pin test per procedural step. 2. Shorts to ground. 3. Shorts between surrounding pins on connectors. 4. Shorts between shield and conductors. 5. Shield continuity. <p>a. Do substeps below:</p> <p>(1) Make sure electrical power is off (A1-F18AC-LMM-000).</p>		

Table 1. Bleed Air Source, No Flow/Left Side (Continued)

Procedure	No	Yes
(2) Open door 64L (A1-F18AC-LMM-010).		
(3) Disconnect 22P-S024 from left engine bleed air pressure regulating and shutoff valve.		
(4) Apply electrical power (A1-F18AC-LMM-000).		
(5) On ECS panel assembly, set BLEED AIR switch to OFF and then to R OFF.		
(6) Does 28vdc exist from 22P-S024 pin A to pin B (ground)?	b	c
b. Do substeps below:		
(1) Remove electrical power (A1-F18AC-LMM-000).		
(2) Does continuity exist from 22P-S024 pin B to aircraft ground?	d	e
c. Replace left engine bleed air pressure regulating and shutoff valve (A1-F18AC-410-300, WP005 00) and do step m	-	-
d. Isolate defective aircraft wiring (A1-F18A()-WDM-000) and do step m	-	-
e. Do substeps below:		
(1) Remove door 32R (A1-F18AC-LMM-010).		
(2) Disconnect 52P-N118B from no. 4 relay panel assembly.		
(3) Does continuity exist from no. 4 relay panel assembly receptacle J2 pin 7 to 60?	f	g
f. Isolate between the no. 4 relay panel assembly wiring and relays 24K-N014 and 3K-N013 (A1-F18AC-420-300, WP037 00) and do step m	-	-
g. Does continuity exist from 52P-N118B pin 7 to 22P-S024 pin A?	d	h
h. Do substeps below:		
(1) Remove ECS panel assembly (A1-F18AC-410-300, WP004 00).		
(2) Does continuity exist from 52J-J078 pin 5 to pin 18?	i	j
i. Replace ECS panel assembly (A1-F18AC-410-300, WP004 00) and do step m	-	-
j. Does continuity exist from 52P-J078 pin 5 to 52P-N118B pin 60?	d	k
k. Do substeps below:		
(1) Turn off electrical power (A1-F18AC-LMM-000).		

Table 1. Bleed Air Source, No Flow/Left Side (Continued)

Procedure	No	Yes
(2) Open door 10L (A1-F18AC-LMM-010).		
(3) Disconnect 52P-C159G from no. 8 circuit breaker/relay panel assembly.		
(4) Does continuity exist from 52P-C159G pin 69 to 52P-J078 pin 18?.....	d	l
l. Isolate between no. 8 circuit breaker/relay panel assembly wiring and 22CBC035 (A1-F18AC-420-300, WP030 00) and do step m.....	-	-
m. If disconnected, removed, or opened during this procedure, make sure the items listed below are connected, installed, or closed:		
(1) 52P-C159G		
(2) 22P-S024		
(3) ECS Panel Assembly		
(4) 52P-N118B		
(5) Door 64L		
(6) Door 10L		
(7) Door 32R.....	-	-

ORGANIZATIONAL MAINTENANCE

FAULT ISOLATION MANUAL

TROUBLESHOOTING PROCEDURE

Reference Material

Line Maintenance Procedures	A1-F18AC-LMM-000
Line Maintenance Access Doors.....	A1-F18AC-LMM-010
Environmental Control Systems.....	A1-F18AC-410-500
Windshield Anti-Ice and Rain Removal System	WP013 00

Alphabetical Index

Subject	Page No.
Table 1.....	1

Record of Applicable Technical Directives

None

Table 1. Not Enough Windshield Anti-Ice/Rain Removal Flow

Support Equipment Required

NOTE

Alternate item type designations or part numbers are listed in parentheses.

Part Number or
Type Designation
260-6XLP
(AN/USM-311)

Nomenclature
Multimeter

Table 1. Not Enough Windshield Anti-Ice/Rain Removal Flow (Continued)


<p align="center">Materials Required</p> <p align="center">None</p> <p align="center">NOTE</p> <p align="center">Windshield Anti-Ice and Rain Removal System Schematic (A1-F18AC-410-500, WP013 00) may be used as an aid when doing this procedure.</p> <p align="center">For component locator, refer to A1-F18AC-410-500, WP013 00.</p> <p>Malfunction is caused by one of the items below:</p> <p>Aircraft Wiring Anti-Ice/Rain Removal Air Control Regulating Valve DEFOG Control Assembly Flow/Temperature Limiting Anti-Ice Modulating Valve No. 2 Circuit Breaker Panel Assembly No. 4 Circuit Breaker Panel Assembly Sensing Lines Warm Air Overtemperature Sensor Warm Air Temperature Control Valve Warm Air Temperature Sensor</p>		
Procedure	No	Yes
<p align="center">  </p> <p align="center">To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use RX1 scale.</p> <p align="center">NOTE</p> <p align="center">The question used in logic tree "Does continuity exist" means to test for the items listed below:</p> <ol style="list-style-type: none"> Pin to pin test per procedural step. Shorts to ground. Shorts between surrounding pins on connectors. Shorts between shield and conductors. Shield continuity. <p>a. Do substeps below:</p> <p>(1) Start APU and operate in ECS mode (A1-F18AC-LMM-000).</p>		

Table 1. Not Enough Windshield Anti-Ice/Rain Removal Flow (Continued)

Procedure	No	Yes
(2) On DEFOG control assembly, set WINDSHIELD ANTI-ICE/RAIN removal switch to RAIN.		
(3) Is there airflow at windshield anti-ice/rain removal nozzle?.....	b	k
b. Do substeps below:		
(1) Shut down APU (A1-F18AC-LMM-000).		
(2) Open door 140 (A1-F18AC-LMM-010).		
(3) Disconnect 23P-B002 from anti-ice/rain removal air control regulating valve.		
(4) Apply electrical power (A1-F18AC-LMM-000).		
(5) Does 28vdc exist from 23P-B002 pin E to aircraft ground?.....	c	j
c. Do substeps below:		
(1) On DEFOG control assembly, set WINDSHIELD ANTI-ICE/RAIN removal switch to ANTI-ICE.		
(2) Does 28vdc exist from 23P-B002 pin A to aircraft ground?.....	d	i
d. Do substeps below:		
(1) Turn off electrical power (A1-F18AC-LMM-000).		
(2) Remove DEFOG control assembly (A1-F18AC-410-300, WP054 00).		
(3) Turn on electrical power (A1-F18AC-LMM-000).		
(4) Does 28vdc exist from 22P-J026 pin 12 to aircraft ground?	f	e
e. Replace DEFOG control assembly (A1-F18AC-410-300, WP054 00) and do step y.....	-	-
f. Do substeps below:		
(1) Turn off electrical power (A1-F18AC-LMM-000).		
(2) Open door 10R (A1-F18AC-LMM-010).		
(3) On 161353 THRU 161359, disconnect 52P-D024D from no. 2 circuit breaker panel assembly.		
(4) On 161360 AND UP, disconnect 52P-D026A from no. 4 circuit breaker panel assembly.		

Table 1. Not Enough Windshield Anti-Ice/Rain Removal Flow (Continued)

Procedure	No	Yes
(5) On 161353 THRU 161359 does continuity exist from 52P-D024D pin 33 to 22P-J026 pin 12?	g	h
(6) On 161360 AND UP, does continuity exist from 52P-D026A pin 23 to 22P-J026 pin 12?	g	h
g. Isolate defective aircraft wiring (A1-F18A()-WDM-000) and do step y	-	-
h. On 161353 THRU 161359, isolate between no. 2 circuit breaker panel assembly wiring and circuit breaker 23CBD001 (A1-F18AC-420-300, WP024 00) and do step y	-	-
On 161360 AND UP, isolate between no. 4 circuit breaker panel wiring and circuit breaker 23CBD001 (A1-F18AC-420-300, WP025 00) and do step y	-	-
i. Do substeps below:		
(1) Turn off electrical power (A1-F18AC-LMM-000).		
(2) Remove DEFOG control assembly (A1-F18AC-410-300, WP054 00).		
(3) Does continuity exist from:		
22P-J026 pin 11 to 23P-B002 pin E		
23P-B002 pin F to aircraft ground?	g	e
j. Replace anti-ice/rain removal air control regulating valve (A1-F18AC-410-300, WP112 00) and do step y	-	-
k. Do substeps below:		
(1) On DEFOG control assembly, set WINDSHIELD ANTI-ICE/RAIN removal switch to ANTI-ICE.		
(2) Does flow increase?	l	m
l. Do substeps below:		
(1) Turn off electrical power (A1-F18AC-LMM-000).		
(2) Remove DEFOG control assembly (A1-F18AC-410-300, WP054 00).		
(3) Does continuity exist from:		
22P-J026 pin 13 to 23P-B002 pin A		
23P-B002 pin C to aircraft ground?	g	e

Table 1. Not Enough Windshield Anti-Ice/Rain Removal Flow (Continued)

Procedure	No	Yes
m. Do substeps below:		
(1) Remove door 27 (A1-F18AC-LMM-010).		
(2) On warm air overtemperature sensor, disconnect sense line and cap.		
(3) Does flow increase?.....	o	n
n. Replace warm air overtemperature sensor (A1-F18AC-410-300, WP111 00) and do step y	-	-
o. Does flow/temperature limiting anti-ice modulating valve position indicator indicate full OPEN?.....	p	s
p. Do substeps below:		
(1) Inspect sense line from flow/temperature limiting anti-ice modulating valve to warm air overtemperature sensor.		
(2) Is sense line leaking or damaged?.....	q	r
q. Replace flow/temperature limiting anti-ice modulating valve (A1-F18AC-410-300, WP110 00) and do step y.....	-	-
r. Repair or replace leaking sense line (A1-F18AC-PIM-000) and do step y.....	-	-
s. Do substeps below:		
(1) On warm air temperature sensor, disconnect sense line and cap.		
(2) Does flow increase?.....	t	u
t. Replace warm air temperature sensor (A1-F18AC-410-300, WP108 00) and do step y	-	-
u. Do substeps below:		
(1) Remove door 34R (A1-F18AC-LMM-010).		
(2) Does warm air temperature control valve position indicator indicate full OPEN?.....	v	j
v. Do substeps below:		
(1) Inspect sense line from warm air temperature control valve to warm air temperature sensor.		
(2) Is sense line leaking or damaged?.....	w	x

Table 1. Not Enough Windshield Anti-Ice/Rain Removal Flow (Continued)

Procedure	No	Yes
w. Replace warm air temperature control valve (A1-F18AC-410-300, WP107 00) and do step y	-	-
x. Repair or replace leaking sense line (A1-F18AC-PIM-000) and do step y	-	-
y. If disconnected, removed, or opened during this procedure, make sure the items listed below are connected, installed, or closed:		
(1) 23P-B002		
(2) 52P-D024D		
(3) 52P-D026A		
(4) DEFOG control assembly		
(5) Connect sensing lines		
(6) Door 34R		
(7) Door 10R		
(8) Door 27		
(9) Door 140	-	-

ORGANIZATIONAL MAINTENANCE

FAULT ISOLATION MANUAL

TROUBLESHOOTING PROCEDURE

This WP supersedes WP104 00, dated 1 February 1993.

Reference Material

None

Alphabetical Index

Subject	Page No.
Table 1.....	2

Record of Applicable Technical Directives

None

Table 1. AV AIR HOT Caution Message and No Other Indication

Support Equipment Required

NOTE

Alternate item type designations or part numbers are listed in parentheses.

Part Number or Type Designation	Nomenclature
77AN (260-6XLP)	Digital Multimeter

Materials Required

None

NOTE

Avionics Cooling System Schematic - Except Cockpit (A1-F18AC-410-500, WP009 00) may be used as an aid when doing this procedure.

For component locator, refer to A1-F18AC-410-500, WP009 00 and WP007 00.

Malfunction is caused by one of the items below:

Aircraft Wiring

Avionics Air Flow/Temperature Sensor

Avionics Flow Valve (Test Port VIII Screen)

Avionics Undercool Warning Temperature Sensor

No. 2 Circuit Breaker Panel Assembly

No. 4 Circuit Breaker Panel Assembly

No. 7 Circuit Breaker/Relay Panel Assembly

Secondary Ejector Valve

Secondary Heat Exchanger

Turbine/Compressor Assembly Hose

Procedure	No	Yes
<div><div>CAUTION</div><p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use RX1 scale.</p><p>To prevent damage to aircraft wiring or equipment, make sure multimeter leads/jumper wires are installed on correct pins. When electrical power is off, 24vdc battery voltage exists on some pins of connectors listed below:</p><p>52P-C057E</p></div>		

Table 1. AV AIR HOT Caution Message and No Other Indication (Continued)

Procedure	No	Yes				
<p style="text-align: center;">NOTE</p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none">1. Pin to pin test per procedural step.2. Shorts to ground.3. Shorts between surrounding pins on connectors.4. Shorts between shield and conductors.5. Shield continuity. <p>When testing for resistance, also test for shorts to ground.</p> <p>WP004 00, table 2 of the A1-F18AC-410-200 manual can be used to identify both a faulty Environmental Control System (ECS), and the component most likely to have caused the faulty condition. Refer to this table to reduce maintenance time, or if problems are encountered during troubleshooting.</p> <p>a. Do substeps below:</p> <ol style="list-style-type: none">(1) Open doors 10R and 36 (A1-F18AC-LMM-010).(2) In door 36, disconnect tube assembly from elbow that attaches to the water extractor sump. Rotate elbow down away from aircraft.(3) Hook up proximity switch control (A1-F18AC-LMM-000).(4) Start APU and operate in ECS mode (A1-F18AC-LMM-000).(5) Make the following ECS control panel settings: <table><tr><td>ECS MODE</td><td>AUTO</td></tr><tr><td>SUIT/CABIN TEMP</td><td>full COLD</td></tr></table> <ol style="list-style-type: none">(6) On 161353 THRU 161359, on no. 4 circuit breaker panel assembly, open ADC (zone D8) circuit breaker.(7) On 161360 AND UP, on no. 2 circuit breaker panel assembly, open ADC (zone B12) circuit breaker.(8) On DEFOG control assembly, set WINDSHIELD ANTI-ICE/RAIN removal switch to ANTI-ICE.			ECS MODE	AUTO	SUIT/CABIN TEMP	full COLD
ECS MODE	AUTO					
SUIT/CABIN TEMP	full COLD					

Table 1. AV AIR HOT Caution Message and No Other Indication (Continued)


Procedure	No	Yes
<div style="text-align: center;">  </div> <p>Components may be damaged due to overheat with ADC circuit breaker open and proximity switch set to WT OFF WHLS for more than 10 seconds.</p>		
(9) On proximity switch control, set LEFT GEAR switch to WT OFF WHLS for not more than 10 seconds while doing step (10).		
(10) Does air flow from left ECS exhaust louver or in front of heat exchanger face in-board of nacelle?	e	b
b. Do substeps below:		
(1) Shut down APU (A1-F18AC-LMM-000).		
(2) Remove doors 34R (A1-F18AC-LMM-010).		
(3) In door 34R, disconnect 22P-N014 from secondary ejector valve.		
(4) Turn on electrical power (A1-F18AC-LMM-000).		
(5) Does 28vdc exist at 22P-N014, pin 3?	d	c
c. Malfunction is caused by one of the items listed below. Replace one of the items below:		
(1) Secondary heat exchanger (A1-F18AC-410-300, WP031 00) and do step y		
(2) Secondary ejector valve (A1-F18AC-410-300, WP32 00 and do step y.....	-	-
d. Isolate between no. 3 relay panel aircraft wiring, relay 12K-E017 and relay 22K-E038 (A1-F18AC-420-300, WP036 00) and do step y.	-	-
e. Do substeps below:		
(1) Open door 42 (A1-F18AC-LMM-010).		
(2) Is turbine/compressor assembly hose disconnected or broken?	f	v
f. Do substeps below:		
(1) Make sure electrical power is off (A1-F18AC-LMM-000).		
(2) Open door 10R (A1-F18AC-LMM-010).		
(3) Disconnect 22P-D002B from ACS temperature/flow controller.		
(4) Do the resistance tests below:		
22P-D002B pin 12 to pin 13 (value per temperature/resistance chart 1, WP056 00)		
22P-D002B pin 2 to pin 7 (value per temperature/resistance chart 4, WP056 00)		
22P-D002B pin 3 to pin 7 (value per temperature/resistance chart 5, WP056 00)		
22P-D002B pin 1 to pin 6 (35 to 50 ohms)		
Are resistance values correct?	g	w

Table 1. AV AIR HOT Caution Message and No Other Indication (Continued)

Procedure	No	Yes
g. Do substeps below:		
(1) Remove door 33 (A1-F18AC-LMM-010).		
(2) Disconnect 22P-E004 from avionics air flow/temperature sensor (sensor).		
(3) Do the resistance tests below:		
22A-E004 sensor receptacle pin 2 to 10 (value per temperature/resistance chart 1, WP056 00)		
22A-E004 sensor receptacle pin 3 to 11 (value per temperature/resistance chart 4, WP056 00)		
22A-E004 sensor receptacle pin 3 to 4 (value per temperature/resistance chart 5, WP056 00)		
22A-E004 sensor receptacle pin 5 to 7 (35 to 50 ohms)		
Are resistance values correct?	h	i
h. Replace avionics air flow/temperature sensor (A1-F18AC-410-300, WP060 00) and do step y	-	-
i. Isolate defective aircraft wiring (A1-F18A()-WDM-000) and do step y.....	-	-
j. Do substeps below:		
(1) Open door 10L (A1-F18AC-LMM-010).		
(2) Disconnect 52P-C057E from no. 7 circuit breaker/relay panel assembly.		
(3) On F/A-18A AND F/A-18B, remove door 32R (A1-F18AC-LMM-010).		
(4) On F/A-18A AND F/A-18B, disconnect 85P-N002A from Signal Data Converter CV-3493/ASM-612.		
(5) On F/A-18A AND F/A-18B, does continuity exist from 85P-N002A pin 24 to 52P-C057E pin 123?	i	k
(6) On F/A-18C AND F/A-18D, open door 14R (A1-F18AC-LMM-010).		
(7) On F/A-18C AND F/A-18D, disconnect 85P-F042D from Signal Data Computer CP- 1726/ASQ-194.		
(8) On F/A-18C AND F/A-18D, does continuity exist from 85P-F042D pin 78 to 52P-C057E pin 123?	i	k
k. Do substeps below:		
(1) Disconnect 22P-G073 from avionics undercool warning temperature sensor (nose wheelwell).		
(2) Does continuity exist from:		
22P-G073 pin 13 to 52P-C057E pin 29		
22P-G073 pin 12 to ground?	i	l

Table 1. AV AIR HOT Caution Message and No Other Indication (Continued)

Procedure	No	Yes
l. Do substeps below:		
(1) Connect 52P-C057E to no. 7 circuit breaker/relay panel assembly.		
(2) Connect 22P-G073 to avionics undercool warning temperature sensor.		
(3) Remove 22K-C072 from no. 7 circuit breaker/relay panel assembly (A1-F18AC-420-300, WP027 00).		
(4) Apply electrical power (A1-F18AC-LMM-000).		
(5) On GND PWR control panel assembly, set and hold 1 switch to A ON, until substep (6) is complete.		
(6) Does 28vdc exist at 22K-C072 relay socket X1?	m	r
m. Do substeps below:		
(1) On GND PWR control panel assembly, release 1 switch.		
(2) Turn off electrical power (A1-F18AC-LMM-000).		
(3) On 161353 THRU 161359, disconnect 52P-D024D from no. 2 circuit breaker panel assembly.		
(4) On 161360 AND UP, disconnect 52P-D026A from no. 4 circuit breaker panel assembly.		
(5) Does continuity exist from:		
On 161353 THRU 161359, 22K-C072 relay socket X1 to 52P-D024D pin 10?	p	n
On 161360 AND UP, 22K-C072 relay socket X1 to 52P-D026A pin 17?	p	o
n. Isolate between no. 2 circuit breaker panel assembly wiring and circuit breaker 22CBD071 (A1-F18AC-420-300, WP024 01) and do step y	-	-
o. Isolate between no. 4 circuit breaker panel assembly wiring and circuit breaker 22CBD071 (A1-F18AC-420-300, WP025 00) and do step y	-	-
p. Do substeps below:		
(1) Disconnect 52P-C057E from no. 7 circuit breaker/relay panel assembly.		
(2) Does continuity exist from 52J-C057E pin 100 to 22K-C072 relay socket X1?	q	i
q. Isolate between no. 7 circuit breaker/relay panel assembly wiring and 22K-C072 (A1-F18AC-420-300, WP027 00) and do step y	-	-
r. Does ground exist at 22K-C072 relay socket X2?	s	u
s. Do substeps below:		
(1) On GND PWR control panel assembly, release 1 switch.		
(2) Turn off electrical power (A1-F18AC-LMM-000).		
(3) Disconnect 52P-C057E from no. 7 circuit breaker/relay panel assembly.		
(4) Does continuity exist from 52J-C057E pin 29 to 22K-C072 relay socket X2?	q	t
t. Replace avionics undercool warning temperature sensor (A1-F18AC-410-300, WP061 00) and do step y	-	-

Table 1. AV AIR HOT Caution Message and No Other Indication (Continued)

Procedure	No	Yes
u. Do substeps below:		
(1) On GND PWR control panel assembly, release 1 switch.		
(2) Turn off electrical power (A1-F18AC-LMM-000).		
(3) Replace 22K-C072 on no. 7 circuit breaker/relay panel assembly (A1-F18AC-420-300, WP027 00) and do step y.....	-	-
v. Connect or replace turbine/compressor assembly hose (A1-F18AC-PIM-010, WP072 00) and do step y	-	-
w. Do substeps below:		
(1) Remove centerline tank, if installed (A1-F18AC-LWS-000)		
(2) Remove centerline pylon, if installed (A1-F18AC-740-300, WP038 00 or A1-F18AE-740-300, WP052 00).		
(3) Remove door 27 (A1-F18AC-LMM-010).		
(4) If avionics flow valve is part number 3213956-3-1 do step j.	-	-
(5) If avionics flow valve is part number 3213956 -4-1 or 3213956-5-1 do substeps below:		
(a) Disconnect metal tube assembly from test port (VIII) tee fitting.		
(b) Remove test port (VIII) tee fitting and screen, as an assembly, from avionics flow valve.		
(c) Does low pressure (17 to 19 psig) air flow freely through tee and screen assembly?	x	j
x. Replace avionics flow valve, screen, and tee fitting (A1-F18AC-410-300, WP058 00) and do step y	-	-
y. If disconnected, removed, or opened during this procedure, make sure the items listed below are connected, installed, or closed:		
(1) 52P-C057E		
(2) 85P-N002A		
(3) 85P-F042D		
(4) 22P-G073		
(5) 22K-C072		
(6) 52P-D024D		
(7) 52P-D026A		
(8) 22P-D002B		
(9) 22P-E004		
(10) Door 33		
(11) Door 10L		
(12) Door 14R		

Table 1. AV AIR HOT Caution Message and No Other Indication (Continued)

Procedure	No	Yes
(13) Door 32R		
(14) Door 34R		
(15) Door 36		
(16) Door 10R		
(17) Door 42		
(18) Install tee fitting and screen in same position as removed.		
(19) Door 27		
(20) Centerline pylon, if removed		
(21) Centerline tank, if removed.....	-	-

ORGANIZATIONAL MAINTENANCE

FAULT ISOLATION MANUAL

TROUBLESHOOTING PROCEDURE

Reference Material

Line Maintenance Procedures	A1-F18AC-LMM-000
Line Maintenance Access Doors.....	A1-F18AC-LMM-010
Environmental Control Systems.....	A1-F18AC-410-500
Avionics Cooling System	WP009 00

Alphabetical Index

Subject	Page No.
Table 1.....	1

Record of Applicable Technical Directives

None

Table 1. Avionics Ground Cooling Fan Inoperative

Support Equipment Required

NOTE

Alternate item type designations or part numbers are listed in parentheses.

Part Number or Type Designation	Nomenclature
260-6XLP (AN/USM-311)	Multimeter

Table 1. Avionics Ground Cooling Fan Inoperative (Continued)


<p style="text-align: center;">Materials Required</p> <p style="text-align: center;">None</p> <p style="text-align: center;">NOTE</p> <p style="text-align: center;">Avionics Cooling System Schematic, except Cockpit (A1-F18AC-410-500, WP009 00) may be used as an aid when doing this procedure.</p> <p style="text-align: center;">For component locator, refer to A1-F18AC-410-500, WP009 00.</p> <p>Malfunction is caused by one of the items below:</p> <p>Aircraft Wiring Avionics Fan Control Pressure Switch Avionics Ground Cooling Air Coupling Switch Avionics Ground Cooling Fan Avionics Ground Cooling Fan Contactor No. 2 Circuit Breaker Panel Assembly No. 2 Relay Panel Assembly No. 4 Circuit Breaker Panel Assembly</p>		
Procedure	No	Yes
<p style="text-align: center;"></p> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use RX1 scale.</p> <p style="text-align: center;">NOTE</p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"> 1. Pin to pin test per procedural step. 2. Shorts to ground. 3. Shorts between surrounding pins on connectors. 4. Shorts between shield and conductors. 5. Shield continuity. <p>a. Do substeps below:</p> <ol style="list-style-type: none"> (1) Open door 10R (A1-F18AC-LMM-010). (2) Gain access to avionics ground cooling fan contactor terminals. (3) Turn on electrical power (A1-F18AC-LMM-000). 		

Table 1. Avionics Ground Cooling Fan Inoperative (Continued)

Procedure	No	Yes
(4) On GND PWR control panel assembly, set and hold 2 switch to B ON for three seconds.		
(5) On avionics ground cooling fan contactor, does 28vdc exist at terminal X1?	i	b
b. Does 115vac exist from terminals A2, B2, and C2 to ground?	f	c
c. Do substeps below:		
(1) Turn off electrical power (A1-F18AC-LMM-000).		
(2) Disconnect 22P-G056 from avionics ground cooling fan in nose wheelwell.		
(3) Does continuity exist from:		
Terminal A2 to 22P-G056 pin A		
Terminal B2 to 22P-G056 pin B		
Terminal C2 to 22P-G056 pin C?	d	e
d. Isolate defective aircraft wiring (A1-F18A()-WDM-000) and do step v.....	-	-
e. Replace avionics ground cooling fan (A1-F18AC-410-300, WP065 00) and do step v.....	-	-
f. Do substeps below:		
(1) Turn off electrical power (A1-F18AC-LMM-000).		
(2) Disconnect 22P-G056 from avionics ground cooling fan (fan).		
(3) Does continuity exist from:		
22P-G056 pin E to terminal X2		
22P-G056 pin F to aircraft ground?	d	g
g. Does continuity exist from 22B-G056 fan receptacle pin E to pin F?.....	e	h
h. Replace avionics ground cooling fan contactor (A1-F18AC-410-300, WP068 00) and do step v.....	-	-
i. Do substeps below:		
(1) Turn off electrical power (A1-F18AC-LMM-000).		
(2) Remove door 39R (A1-F18AC-LMM-010).		
(3) Disconnect 22P-R110 from avionics fan control pressure switch.		

Table 1. Avionics Ground Cooling Fan Inoperative (Continued)

Procedure	No	Yes
(4) Does continuity exist from 22P-R110 pin 1 to avionics ground cooling fan contactor terminal X1?	j	l
j. Do substeps below:		
(1) Open door 14R (A1-F18AC-LMM-010).		
(2) Disconnect 52P-F058B from no. 2 relay panel assembly.		
(3) Does continuity exist from:		
52P-F058B pin 17 to 22P-R110 pin 1		
52P-F058B pin 73 to terminal X1?	d	k
k. Isolate between no. 2 relay panel assembly wiring and relay 1K-F081 (A1-F18AC-420-300, WP033 00) and do step v.	-	-
l. Do substeps below:		
(1) Turn on electrical power (A1-F18AC-LMM-000).		
(2) Does 28vdc exist at 22P-R110 pin 3?	n	m
m. Replace avionics fan control pressure switch (A1-F18AC-410-300, WP069 00) and do step v.	-	-
n. Do substeps below:		
(1) Turn off electrical power (A1-F18AC-LMM-000).		
(2) Open door 14R (A1-F18AC-LMM-010).		
(3) Disconnect 52P-F058B from no. 2 relay panel assembly.		
(4) Does continuity exist from 52J-F058B pin 3 to pin 7?	o	p
o. Isolate between no. 2 relay panel assembly wiring and relay 12K-F019 (A1-F18AC-420-300, WP033 00) and do step v.	-	-
p. Does continuity exist from 52P-F058B pin 7 to 22P-R110 pin 3?	q	s
q. Do substeps below:		
(1) Remove door 128 (A1-F18AC-LMM-010).		
(2) Remove avionics ground cooling air coupling switch (switch) (A1-F18AC-410-300, WP070 00).		
(3) Does continuity exist from 22S-P051 switch receptacle pin 1 to pin 2?	r	d

Table 1. Avionics Ground Cooling Fan Inoperative (Continued)

Procedure	No	Yes
r. Replace avionics ground cooling air coupling switch (A1-F18AC-410-300, WP070 00) and do step v.	-	-
s. Do substeps below:		
(1) On 161353 THRU 161359, disconnect 52P-D024D from no. 2 circuit breaker panel assembly.		
(2) On 161360 AND UP, disconnect 52P-D026A from no. 4 circuit breaker panel assembly.		
(3) On 161353 THRU 161359, does continuity exist from 52P-F058B pin 3 to 52P-D024D pin 1?	d	t
(4) On 161360 AND UP, does continuity exist from 52P-F058B pin 3 to 52P-D026A pin 36?	d	u
t. Isolate between no. 2 circuit breaker panel assembly wiring and circuit breaker 22CBD070 (A1-F18AC-420-300, WP024 00) and do step v.	-	-
u. Isolate between no. 4 circuit breaker panel assembly wiring and circuit breaker 22CBD070 (A1-F18AC-420-300, WP025 00) and do step v.	-	-
v. If disconnected, removed, or opened during this procedure, make sure the items listed below are connected, installed, or closed:		
(1) Avionics ground cooling fan contactor cover		
(2) 22P-G056		
(3) Avionics ground cooling air coupling switch		
(4) 22P-R110		
(5) 52P-F058B		
(6) 52P-D024D		
(7) 52P-D026A		
(8) Door 14R		
(9) Door 10R		
(10) Door 39R		
(11) Door 128	-	-

ORGANIZATIONAL MAINTENANCE

FAULT ISOLATION MANUAL

TROUBLESHOOTING PROCEDURE

Reference Material

Line Maintenance Procedures	A1-F18AC-LMM-000
Line Maintenance Access Doors.....	A1-F18AC-LMM-010
Environmental Control Systems.....	A1-F18AC-410-500
Component Locators	WP004 00

Alphabetical Index

Subject	Page No.
Table 1.....	1

Record of Applicable Technical Directives

None

Table 1. Bleed Air Source, No Flow/Right Side

Support Equipment Required	
NOTE	
Alternate item type designations or part numbers are listed in parentheses.	
Part Number or Type Designation	Nomenclature
260-6XLP	Multimeter
(AN/USM-311)	

Table 1. Bleed Air Source, No Flow/Right Side (Continued)


<p align="center">Materials Required</p> <p align="center">None</p> <p align="center">NOTE</p> <p>Bleed Air System Schematic (A1-F18AC-410-500, WP005 00) may be used as an aid when doing this procedure.</p> <p>For component locator, refer to A1-F18AC-410-500, WP004 00.</p> <p>Malfunction is caused by one of the items below:</p> <p>Aircraft Wiring ECS Panel Assembly No. 2 Circuit Breaker Panel Assembly No. 4 Circuit Breaker Panel Assembly No. 4 Relay Panel Assembly Right Engine Bleed Air Pressure Regulating and Shutoff Valve</p>		
Procedure	No	Yes
<p align="center"></p> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale.</p> <p>Pin to pin tests that do not go through switches/relay contacts may use RX1 scale.</p> <p align="center">NOTE</p> <p>The question used in logic tree "Does continuity exist" means to test for the items listed below:</p> <ol style="list-style-type: none"> 1. Pin to pin test per procedural step. 2. Shorts to ground. 3. Shorts between surrounding pins on connectors. 4. Shorts between shield and conductors. 5. Shield continuity. <p>a. Do substeps below:</p> <ol style="list-style-type: none"> (1) Make sure electrical power is off (A1-F18AC-LMM-000). (2) Open door 68R (A1-F18AC-LMM-010). 		

Table 1. Bleed Air Source, No Flow/Right Side (Continued)

Procedure	No	Yes
(3) Disconnect 22P-T022 from right engine bleed air pressure regulating and shutoff valve.		
(4) Apply electrical power (A1-F18AC-LMM-000).		
(5) On ECS panel assembly, set BLEED AIR switch to OFF and then to L OFF.		
(6) Does 28vdc exist from 22P-T022 pin A to pin B (ground)?.....	b	c
b. Do substeps below:		
(1) Remove electrical power (A1-F18AC-LMM-000).		
(2) Does continuity exist from 22P-T022 pin B to aircraft ground?.....	d	e
c. Replace right engine bleed air pressure regulating and shutoff valve (A1-F18AC-410-300, WP005 00) and do step n.....	-	-
d. Isolate defective aircraft wiring (A1-F18A()-WDM-000) and do step n.....	-	-
e. Do substeps below:		
(1) Remove door 32R (A1-F18AC-LMM-010).		
(2) Disconnect 52P-N118B from no. 4 relay panel assembly.		
(3) Does continuity exist from no. 4 relay panel assembly receptacle J2 pin 35 to pin 61?.	f	g
f. Isolate between the no. 4 relay panel assembly wiring and relays 24K-N015 and 3K-N014 (A1-F18AC-420-300, WP037 00) and do step n.....	-	-
g. Does continuity exist from 52P-N118B pin 35 to 22P-T022 pin A?.....	d	h
h. Do substeps below:		
(1) Remove ECS panel assembly (A1-F18AC-410-300, WP004 00).		
(2) Does continuity exist from 52J-J078 pin 6 to pin 8?.....	i	j
i. Replace ECS panel assembly (A1-F18AC-410-300, WP004 00) and do step n.....	-	-
j. Does continuity exist from 52P-J078 pin 6 to 52P-N118B pin 61?	d	k
k. Do substeps below:		
(1) Open door 10R (A1-F18AC-LMM-010).		
(2) On 161353 THRU 161359, disconnect 52P-D024C from no. 2 circuit breaker panel assembly.		

Table 1. Bleed Air Source, No Flow/Right Side (Continued)

Procedure	No	Yes
(3) On 161360 AND UP, disconnect 52P-D026C from no. 4 circuit breaker panel assembly.		
(4) On 161353 THRU 161359, does continuity exist from 52P-J078 pin 8 to 52P-D024C pin N?	d	l
(5) On 161360 AND UP, does continuity exist from 52P-J078 pin 8 to 52P-D026C pin C?	d	m
l. Isolate between no. 2 circuit breaker panel assembly wiring and 22CBD036 (A1-F18AC-420-300, WP024 00) and do step n	-	-
m. Isolate between no. 4 circuit breaker panel assembly wiring and 22CBD036 (A1-F18AC-420-300, WP025 00) and do step n	-	-
n. If disconnected, removed, or opened during this procedure, make sure the items listed below are connected, installed, or closed:		
(1) 22P-T022		
(2) 52P-N118B		
(3) 52P-D024C		
(4) 52P-D026C		
(5) ECS Panel Assembly		
(6) Door 10R		
(7) Door 32R		
(8) Door 68R.....	-	-

ORGANIZATIONAL MAINTENANCE

FAULT ISOLATION MANUAL

TROUBLESHOOTING PROCEDURE

Reference Material

Line Maintenance Procedures	A1-F18AC-LMM-000
Environmental Control Systems.....	A1-F18AC-410-500
Avionics Cooling System	WP009 00

Alphabetical Index

Subject	Page No.
Table 1.....	1

Record of Applicable Technical Directives

None

Table 1. Avionics Ground Cooling Fan Output Low

Support Equipment Required	
NOTE	
Alternate item type designations or part numbers are listed in parentheses.	
Part Number or Type Designation	Nomenclature
260-6XLP (AN/USM-311)	Multimeter

Table 1. Avionics Ground Cooling Fan Output Low (Continued)


Materials Required None		
NOTE Avionics Cooling System Schematic, Except Cockpit (A1-F18AC-410-500, WP009 00) may be used as an aid when doing this procedure. For component locator, refer to A1-F18AC-410-500, WP009 00. Malfunction is caused by one of the items below: Aircraft Wiring Avionics Ground Cooling Fan Avionics Ground Cooling Fan Contactor No. 2 Circuit Breaker Panel Assembly Obstruction on Avionics Ground Cooling Fan Screen		
Procedure	No	Yes
		
To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use RX1 scale.		
NOTE The question used in logic tree "Does continuity exist" means to test for the items listed below:		
1. Pin to pin test per procedural step. 2. Shorts to ground. 3. Shorts between surrounding pins on connectors. 4. Shorts between shield and conductors. 5. Shield continuity.		
a. Do substeps below:		
(1) Make sure electrical power is off (A1-F18AC-LMM-000).		
(2) Inspect screen on ground cooling fan for obstruction (nose wheelwell).		
(3) Does blockage exist?	c	b
b. Remove obstruction and do step k	-	-

Table 1. Avionics Ground Cooling Fan Output Low (Continued)

Procedure	No	Yes
c. Do substeps below:		
(1) Open door 10R (A1-F18AC-LMM-010).		
(2) Remove avionics ground cooling fan contactor terminal shields.		
(3) Turn on electrical power (A1-F18AC-LMM-000).		
(4) On GND PWR control panel assembly, set and hold 2 switch to B ON for three seconds.		
(5) Does 115vac exist from terminals A2, B2 and C2 to ground?.....	g	d
d. Do substeps below:		
(1) Turn off electrical power (A1-F18AC-LMM-000).		
(2) Disconnect 22P-G056 from avionics ground cooling fan (nose wheelwell).		
(3) Does continuity exist from:		
Terminal A2 to 22P-G056 pin A		
Terminal B2 to 22P-G056 pin B		
Terminal C2 to 22P-G056 pin C?	f	e
e. Replace avionics ground cooling fan (A1-F18AC-410-300, WP065 00) and do step k.....	-	-
f. Isolate defective aircraft wiring (A1-F18A()-WDM-000) and do step k.	-	-
g. Does 115vac exist at terminals A1, B1 and C1 to ground?.....	i	h
h. Replace avionics ground cooling fan contactor (A1-F18AC-410-300, WP068 00) and do step k.	-	-
i. Do substeps below:		
(1) Turn off electrical power (A1-F18AC-LMM-000).		
(2) On 161353 THRU 161359, disconnect 52P-D024E from no. 2 circuit breaker panel assembly.		
(3) On 161360 AND UP, disconnect 52P-D024B from no. 2 circuit breaker panel assembly.		

Table 1. Avionics Ground Cooling Fan Output Low (Continued)

Procedure	No	Yes
(4) Does continuity exist from:		
On 161353 THRU 161359		
Terminal A1 to 52P-D024E pin F		
Terminal B1 to 52P-D024E pin A		
Terminal C1 to 52P-D024E pin B?	f	j
On 161360 AND UP		
Terminal A1 to 52P-D024B pin F		
Terminal B1 to 52P-D024B pin A		
Terminal C1 to 52P-D024B pin B?	f	j
j. Isolate between no. 2 circuit breaker panel assembly wiring and circuit breakers 22CBD052, 22CBD053 and 22CBD054 (A1-F18AC-420-300, WP024 00) and do step k.	-	-
k. If disconnected, removed, or opened during this procedure, make sure the items listed below are connected, installed, or closed:		
(1) Avionics ground cooling fan contactor terminal shields		
(2) 22P-G056		
(3) 52P-D024B		
(4) 52P-D024E		
(5) Door 10R.....	-	-

ORGANIZATIONAL MAINTENANCE

FAULT ISOLATION MANUAL

TROUBLESHOOTING PROCEDURE

Reference Material

Line Maintenance Procedures	A1-F18AC-LMM-000
Line Maintenance Access Doors.....	A1-F18AC-LMM-010
Environmental Control Systems.....	A1-F18AC-410-500
Avionics Cooling System	WP009 00

Alphabetical Index

Subject	Page No.
Table 1.....	1

Record of Applicable Technical Directives

None

Table 1. Avionics Ground Cooling Fan Will Not Shut Off When Ground Power Switches Are Set To AUTO During Ground Maintenance

Support Equipment Required

NOTE

Alternate item type designations or part numbers are listed in parentheses.

**Part Number or
Type Designation**
260-6XLP
(AN/USM-311)

Nomenclature
Multimeter

Table 1. Avionics Ground Cooling Fan Will Not Shut Off When Ground Power Switches Are Set To AUTO During Ground Maintenance (Continued)


Materials Required																	
None																	
NOTE																	
Avionics Cooling System Schematic, Except Cockpit (A1-F18AC-410-500, WP009 00) may be used as an aid when doing this procedure.																	
For component locator, refer to A1-F18AC-410-500, WP009 00.																	
Malfunction is caused by one of the items below:																	
Aircraft Wiring Avionics Ground Cooling Fan Contactor No. 2 Relay Panel Assembly																	
Procedure	No	Yes															
<div style="text-align: center;">  </div> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use RX1 scale.</p> <p style="text-align: center;">NOTE</p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"> 1. Pin to pin test per procedural step. 2. Shorts to ground. 3. Shorts between surrounding pins on connectors. 4. Shorts between shield and conductors. 5. Shield continuity. <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">a. Apply electrical power. (A1-F18AC-LMM-000). Do cockpit avionics cooling fans come on?..</td><td style="width: 5%; text-align: center;">c</td><td style="width: 15%; text-align: center;">b</td></tr> <tr> <td>b. Do table 2, WP174 00.....</td><td style="text-align: center;">-</td><td style="text-align: center;">-</td></tr> <tr> <td>c. Do substeps below:</td><td></td><td></td></tr> <tr> <td> (1) Open door 10R (A1-F18AC-LMM-010).</td><td></td><td></td></tr> <tr> <td> (2) Remove electrical power (A1-F18AC-LMM-000).</td><td></td><td></td></tr> </table>			a. Apply electrical power. (A1-F18AC-LMM-000). Do cockpit avionics cooling fans come on?..	c	b	b. Do table 2, WP174 00.....	-	-	c. Do substeps below:			(1) Open door 10R (A1-F18AC-LMM-010).			(2) Remove electrical power (A1-F18AC-LMM-000).		
a. Apply electrical power. (A1-F18AC-LMM-000). Do cockpit avionics cooling fans come on?..	c	b															
b. Do table 2, WP174 00.....	-	-															
c. Do substeps below:																	
(1) Open door 10R (A1-F18AC-LMM-010).																	
(2) Remove electrical power (A1-F18AC-LMM-000).																	

Table 1. Avionics Ground Cooling Fan Will Not Shut Off When Ground Power Switches Are Set To AUTO During Ground Maintenance (Continued)

Procedure	No	Yes
(3) Remove avionics ground cooling fan contactor terminal shields.		
(4) Apply electrical power (A1-F18AC-LMM-000).		
(5) Does 28vdc exist at terminal X1?	g	d
d. Do substeps below:		
(1) Turn off electrical power (A1-F18AC-LMM-000).		
(2) Open door 14R (A1-F18AC-LMM-010).		
(3) Disconnect 52P-F058B from no. 2 relay panel assembly.		
(4) Does continuity exist from 52P-F058B pin 73 to terminal X1 of avionics ground cooling fan contactor?	e	f
e. Isolate defective aircraft wiring (A1-F18A()-WDM-000) and do step h.....	-	-
f. Isolate between no. 2 relay panel assembly wiring and relay 1K-F081 (A1-F18AC-420-300, WP032 00) and do step h.....	-	-
g. Replace avionics ground cooling fan contactor (A1-F18AC-410-300, WP068 00) and do step h.....	-	-
h. If disconnected, removed, or opened during this procedure, make sure the items listed below are connected, installed, or closed:		
(1) 52P-F058B		
(2) Avionics ground cooling fan contactor terminal shields		
(3) Door 10R		
(4) Door 14R.....	-	-

ORGANIZATIONAL MAINTENANCE

FAULT ISOLATION MANUAL

TROUBLESHOOTING PROCEDURE

Reference Material

Line Maintenance Procedures	A1-F18AC-LMM-000
Line Maintenance Access Doors.....	A1-F18AC-LMM-010
Environmental Control Systems.....	A1-F18AC-410-500
Avionics Cooling System	WP009 00

Alphabetical Index

Subject	Page No.
Table 1.....	2

Record of Applicable Technical Directives

None

Table 1. Avionics Ground Cooling Fan Will Not Shut Down When External Cooling Air is Applied

Support Equipment Required		
NOTE Alternate item type designations or part numbers are listed in parentheses.		
Part Number or Type Designation 260-6XLP (AN/USM-311) 98000 (305AS10000)	Nomenclature Multimeter Mobile Air Ground Cooling Air Conditioner (Mobile Electric Air Conditioner)	
Materials Required None		
NOTE Avionics Cooling System Schematic, Except Cockpit (A1-F18AC-410-500, WP009 00) may be used as an aid when doing this procedure.		
For component locator, refer to A1-F18AC-410-500, WP009 00.		
Malfunction is caused by one of the items below:		
Aircraft Wiring Avionics Ground Cooling Air Coupling Switch Avionics Ground Cooling Fan Contactor No. 2 Relay Panel Assembly		
Procedure	No	Yes
<div style="border: 2px solid black; padding: 5px; display: inline-block; margin: 10px 0;"> CAUTION </div> <p style="margin-top: 20px;">To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin test that do not go through switches/relay contacts may use RX1 scale.</p>		

Table 1. Avionics Ground Cooling Fan Will Not Shut Down When External Cooling Air is Applied (Continued)

Procedure	No	Yes
<p style="text-align: center;">NOTE</p> <p>The question used in logic tree "Does continuity exist" means to test for the items listed below:</p> <ol style="list-style-type: none"> 1. Pin to pin test per procedural step. 2. Shorts to ground. 3. Shorts between surrounding pins on connectors. 4. Shorts between shield and conductors. 5. Shield continuity. 		
a. Do substeps below:		
(1) Open door 10R (A1-F18AC-LMM-010).		
(2) Remove avionics ground cooling fan contactor terminal shields.		
(3) Remove door 128 (A1-F18AC-LMM-010).		
(4) Apply electrical power (A1-F18AC-LMM-000).		
(5) Connect mobile air ground cooling air conditioner hose (door 128).		
(6) On GND PWR control panel assembly, set and hold 2 switch to B ON for three seconds.		
(7) On avionics ground cooling fan contactor, does 28vdc exist at terminal X1?	c	b
b. Do substeps below:		
(1) Turn off electrical power (A1-F18AC-LMM-000).		
(2) Open door 14R (A1-F18AC-LMM-010).		
(3) Disconnect 52P-F058B from no. 2 relay panel assembly.		
(4) Does continuity exist from 52P-F058B pin 73 to terminal X1 of avionics ground cooling fan contactor?	d	e
c. Replace avionics ground cooling fan contactor (A1-F18AC-410-300, WP068 00) and do step j	-	-
d. Isolate defective aircraft wiring (A1-F18A()-WDM-000) and do step j.....	-	-
e. Does continuity exist from 52J-F058B pin 17 to pin 73?	f	g

Table 1. Avionics Ground Cooling Fan Will Not Shut Down When External Cooling Air is Applied (Continued)

Procedure	No	Yes
f. Isolate between no. 2 relay panel assembly wiring and relay 1K-F081 (A1-F18AC-420-300, WP032 00) and do step j	-	-
g. Do substeps below:		
(1) Remove door 39R (A1-F18AC-LMM-010).		
(2) Disconnect 22P-R110 from avionics fan control pressure switch.		
(3) Does continuity exist from 52P-F058B pin 17 and 22P-R110 pin 1?	d	h
h. Do substeps below:		
(1) Disconnect mobile air ground cooling air conditioner hose.		
(2) Remove avionics ground cooling air coupling switch (A1-F18AC-410-300, WP070 00).		
(3) Depress plunger on avionics ground cooling air coupling switch.		
(4) Does continuity exist from 22S-P051 receptacle pin 1 to pin 2?	d	i
i. Replace avionics ground cooling air coupling switch (A1-F18AC-410-300, WP070 00) and do step j	-	-
j. If disconnected, removed, or opened during this procedure, make sure the items listed below are connected, installed, or closed:		
(1) 52P-F058B		
(2) 22P-R110		
(3) Avionics ground cooling fan contactor terminal shields		
(4) Mobile air ground cooling air conditioner hose		
(5) Avionics ground cooling air coupling switch		
(6) Door 128		
(7) Door 39R		
(8) Door 14R		
(9) Door 10R.....	-	-

ORGANIZATIONAL MAINTENANCE

FAULT ISOLATION MANUAL

TROUBLESHOOTING PROCEDURE

Reference Material

Line Maintenance Procedures	A1-F18AC-LMM-000
Line Maintenance Access Doors.....	A1-F18AC-LMM-010
Environmental Control Systems.....	A1-F18AC-410-500
Avionics Cooling System	WP009 00

Alphabetical Index

Subject	Page No.
Table 1.....	1

Record of Applicable Technical Directives

None

Table 1. Avionics Ground Cooling Fan Will Not Shutdown With APU Running and AUG Switch Pulled

Support Equipment Required

NOTE

Alternate item type designations or part numbers are listed in parentheses.

**Part Number or
Type Designation**
260-6XLP
(AN/USM-311)

Nomenclature
Multimeter

Table 1. Avionics Ground Cooling Fan Will Not Shutdown With APU Running and AUG Switch Pulled (Continued)


<p align="center">Materials Required</p> <p align="center">None</p> <p align="center">NOTE</p> <p>Avionics Cooling System Schematic, Except Cockpit (A1-F18AC-410-500, WP009 00) may be used as an aid when doing this procedure.</p> <p>For component locator, refer to A1-F18AC-410-500, WP009 00.</p> <p>Malfunction is caused by one of the items below:</p> <p>Aircraft Wiring Avionics Fan Control Pressure Switch Avionics Ground Cooling Fan Contactor No. 2 Relay Panel Assembly</p>		
Procedure	No	Yes
<p align="center">  </p> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use RX1 scale.</p> <p align="center">NOTE</p> <p>The question used in logic tree "Does continuity exist" means to test for the items listed below:</p> <ol style="list-style-type: none"> 1. Pin to pin test per procedural step. 2. Shorts to ground. 3. Shorts between surrounding pins on connectors. 4. Shorts between shield and conductors. 5. Shield continuity. <p>a. Do substeps below:</p> <ol style="list-style-type: none"> (1) Open door 10R (A1-F18AC-LMM-010). (2) Remove avionics ground cooling fan contactor terminal shields. (3) Start APU and operate in ECS mode (A1-F18AC-LMM-000). (4) On GND PWR control panel assembly, set and hold 2 switch to B ON for three seconds. 		

Table 1. Avionics Ground Cooling Fan Will Not Shutdown With APU Running and AUG Switch Pulled (Continued)

Procedure	No	Yes
(5) On avionics ground cooling fan contactor, does 28vdc exist at terminal X1?	b	c
b. Replace avionics ground cooling fan contactor (A1-F18AC-410-300, WP068 00) and do step i.	-	-
c. Do substeps below:		
(1) Shut down APU (A1-F18AC-LMM-000).		
(2) Open door 14R (A1-F18AC-LMM-010).		
(3) Disconnect 52P-F058B from no. 2 relay panel assembly.		
(4) Does continuity exist from 52P-F058B pin 73 to terminal X1 of avionics ground cooling fan contactor?	d	e
d. Isolate defective aircraft wiring (A1-F18A()-WDM-000) and do step i.	-	-
e. Does continuity exist from 52J-F058B pin 17 to pin 73?	f	g
f. Isolate between no. 2 relay panel assembly wiring and relay 1K-F081 (A1-F18AC-420-300, WP032 00) and do step i.	-	-
g. Do substeps below:		
(1) Remove door 39R (A1-F18AC-LMM-010).		
(2) Disconnect 22P-R110 from avionics fan control pressure switch.		
(3) Does continuity exist from 22P-R110 pin 1 to 52P-F058B pin 17?	d	h
h. Replace avionics fan control pressure switch (A1-F18AC-410-300, WP069 00) and do step i.	-	-
i. If disconnected, removed, or opened during this procedure, make sure the items listed below are connected, installed, or closed:		
(1) Shut down APU		
(2) 22P-R110		
(3) 52P-F058B		
(4) Avionics ground cooling fan contactor terminal shields		
(5) Door 10R		

**Table 1. Avionics Ground Cooling Fan Will Not Shutdown With APU Running and
AUG Switch Pulled (Continued)**

Procedure	No	Yes
(6) Door 14R		
(7) Door 39R.....	-	-

ORGANIZATIONAL MAINTENANCE

FAULT ISOLATION MANUAL

TROUBLESHOOTING PROCEDURE

EFFECTIVITY: F/A-18A AND F/A-18B

This WP supersedes WP113 00, dated 15 December 1987.

Reference Material

Line Maintenance Access Doors.....	A1-F18AC-LMM-010
Line Maintenance Procedures	A1-F18AC-LMM-000
Maintenance Status Display and Recording System.....	A1-F18AC-580-500
Component Locator.....	WP003 00

Alphabetical Index

Subject	Page No.
Table 1.....	2

Record of Applicable Technical Directives

None

Table 1. Code 995 Not Displayed When MAINTENANCE CODE DISPLAY Switch Is Pressed After Fluids Test

Support Equipment Required		
NOTE		
Alternate item type designations or part numbers are listed in parentheses.		
Part Number or Type Designation	Nomenclature	
260-6XLP (AN/USM-311)	Multimeter	
Materials Required		
None		
NOTE		
Maintenance Status Display and Recording System Power Schematic and Fluids Test Schematic (A1-F18AC-580-500, WP005 00 and WP006 00) may be used as an aid while doing this procedure.		
For component locator, refer to A1-F18AC-580-500, WP003 00.		
Malfunction is caused by one of the items listed below:		
Aircraft Wiring Digital Display Indicator ID-2150/ASM-612 Signal Data Converter CV-3493/ASM-612 Signal Data Recorder RO-508/ASM-612		
Procedure	No	Yes
<div>CAUTION</div> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <p>To prevent damage to aircraft wiring or equipment make sure multimeter leads/jumper wires are installed on correct pins. When electrical power is off, 24VDC battery voltage exists on some pins of connectors listed below:</p> <p>85P-F001A</p>		

Table 1. Code 995 Not Displayed When MAINTENANCE CODE DISPLAY Switch Is Pressed After Fluids Test (Continued)

Procedure	No	Yes
<p style="text-align: center;">NOTE</p> <p>The question used in logic tree "Does continuity exist" means to test for the items listed below:</p> <ol style="list-style-type: none"> 1. Pin to pin test per procedural step. 2. Shorts to ground. 3. Shorts between surrounding pins on connectors. 4. Shorts between shield and conductors. 5. Shield continuity. 		
a. Do substeps below:		
(1) Open door 10L (A1-F18AC-LMM-010).		
(2) On no. 8 circuit breaker/relay panel assembly, open circuit breaker 85CBC004, MSDRS.		
(3) Open door 32R (A1-F18AC-LMM-010).		
(4) Disconnect 85P-N002A from Signal Data Converter CV-3493/ASM-612.		
(5) Does continuity exist from 85P-N002A pin 56 to aircraft ground?	c	b
b. Isolate defective aircraft wiring (A1-F18A()-WDM-000) and do step f	-	-
c. Do substeps below:		
(1) Open door 14R (A1-F18AC-LMM-010).		
(2) Disconnect 85P-F001A from Signal Data Recorder RO-508/ASM-612.		
(3) While pressing nose wheelwell Digital Display Indicator ID-2150/ASM-612 FLUIDS CHECK switch, does continuity exist from 85P-F001A pin 124 to aircraft ground?.....	b	d
d. Do substeps below:		
(1) Disconnect 85P-F001B from Signal Data Recorder RO-508/ASM-612.		
(2) Disconnect 85P-G003A from nose wheelwell Digital Display Indicator ID-2150/ASM-612.		

Table 1. Code 995 Not Displayed When MAINTENANCE CODE DISPLAY Switch Is Pressed After Fluids Test (Continued)

Procedure	No	Yes
(3) Does continuity exist from:		
85P-F001A pin 105 to 85P-G003A pin 28		
85P-F001A pin 106 to 85P-G003A pin 27		
85P-F001A pin 107 to 85P-G003A pin 26		
85P-F001A pin 108 to 85P-G003A pin 25		
85P-F001B pin 8 to 85P-G003A pin 32		
85P-F001B pin 9 to 85P-G003A pin 31		
85P-F001B pin 20 to 85P-G003A pin 30		
85P-F001B pin 21 to 85P-G003A pin 29?.....	b	e
e. Do Signal Data Recording Set AN/ASM-612 Test (A1-F18AC-580-200, WP003 00) and step f.	-	-
f. If disconnected, removed, or opened during procedure, make sure the items listed below are connected, installed, or closed:		
(1) MSDRS circuit breaker 85CBC004		
(2) 85P-N002A		
(3) 85P-F001A		
(4) 85P-F001B		
(5) 85P-G003A		
(6) Door 10L		
(7) Door 32R		
(8) Door 14R.....	-	-

ORGANIZATIONAL MAINTENANCE**FAULT ISOLATION MANUAL****TROUBLESHOOTING PROCEDURE**

This WP supersedes WP114 00, dated 15 December 1987.

Title	WP Number
Avionic Mux 1X Schematic - F/A-18A AND F/A-18B.....	114 01
Avionic Mux 1X Schematic - F/A-18C AND F/A-18D.....	114 02
Avionic Mux 1Y Schematic - F/A-18A AND F/A-18B.....	114 01
Avionic Mux 1Y Schematic - F/A-18C AND F/A-18D.....	114 02
Avionic Mux 2X Schematic - F/A-18A AND F/A-18B.....	114 01
Avionic Mux 2X Schematic - F/A-18C AND F/A-18D.....	114 02
Avionic Mux 2Y Schematic - F/A-18A AND F/A-18B.....	114 01
Avionic Mux 2Y Schematic - F/A-18C AND F/A-18D.....	114 02
Memory Inspect Procedure.....	114 03

ORGANIZATIONAL MAINTENANCE

FAULT ISOLATION MANUAL

TROUBLESHOOTING PROCEDURE

EFFECTIVITY: F/A-18A/B

Reference Material

None

Alphabetical Index

Subject	Page No.
Avionic Mux Bus 1X Schematic, Figure 1	4
Avionic Mux Bus 1Y Schematic, Figure 2	0
Avionic Mux Bus 2X Schematic, Figure 3	0
Avionic Mux Bus 2Y Schematic, Figure 4	0

Record of Applicable Technical Directives

None

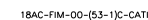


Figure 1.

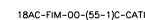
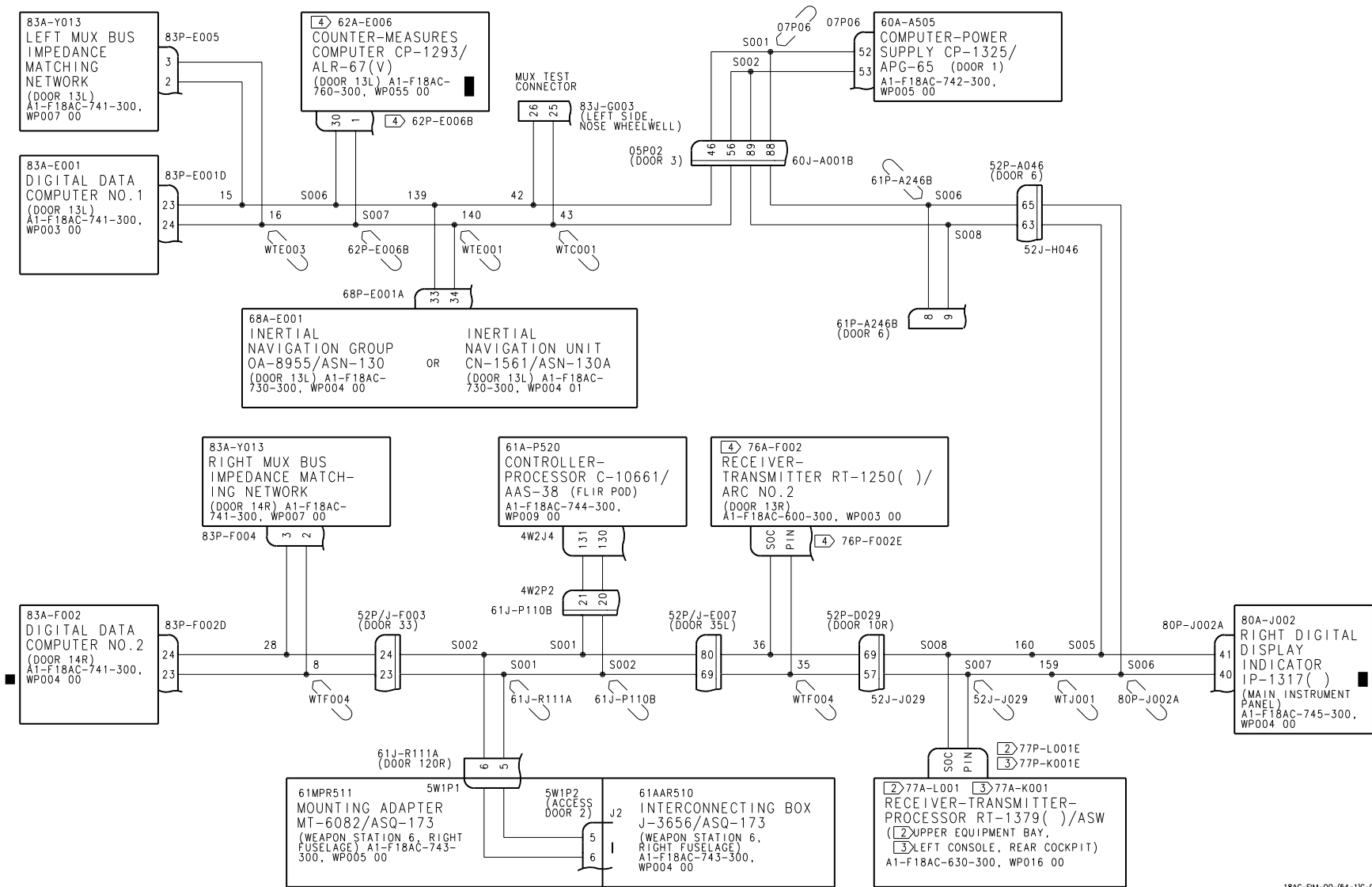
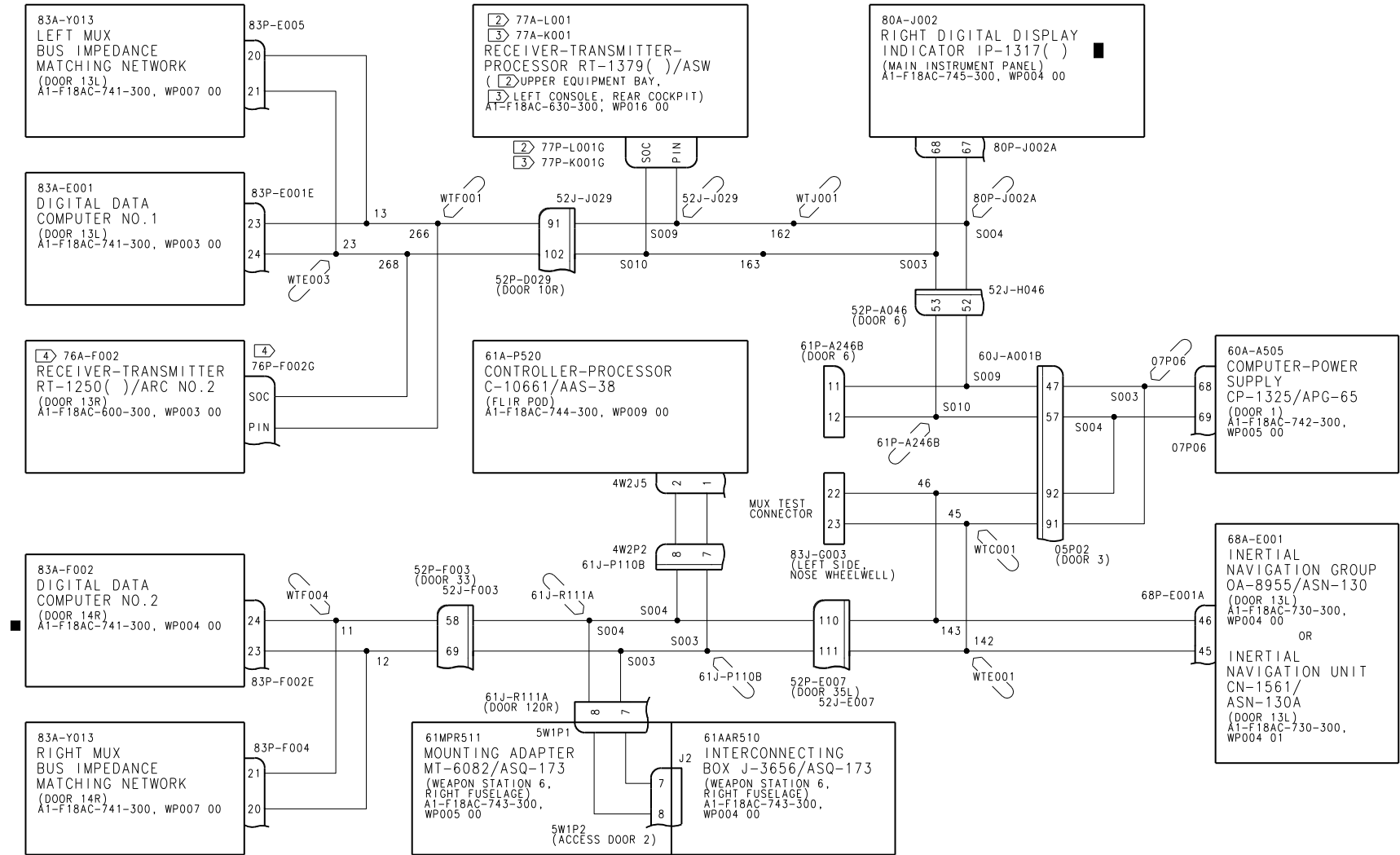


Figure 2.





1. NONSTANDARD SYMBOL:

- 2 F/A-18A
- 3 F/A-18B
- 4 161702 AND UP

LEGEND

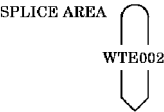


Figure 4.

Figure 4. Avionic Mux Bus 2Y Schematic

Figure 4.

ORGANIZATIONAL MAINTENANCE

FAULT ISOLATION MANUAL

TROUBLESHOOTING PROCEDURE

EFFECTIVITY: F/A-18C AND F/A-18D

This WP supersedes WP114 02, dated 15 August 1994.

Reference Material

None

Alphabetical Index

Subject	Page No.
Avionic Mux Bus 1X Schematic - 163427 THRU 164980, Figure 1	2
Avionic Mux Bus 1Y Schematic - 163427 THRU 164980, Figure 2	3
Avionic Mux Bus 2X Schematic - 163985 THRU 164980, Figure 3	4
Avionic Mux Bus 2Y Schematic - 163985 THRU 164980, Figure 4	6
Avionic Mux Bus 2X Schematic - 163427 THRU 163782, Figure 5	8
Avionic Mux Bus 2Y Schematic - 163427 THRU 163782, Figure 6	9
Avionic Mux Bus 1X Schematic - 165171 AND UP, Figure 7	10
Avionic Mux Bus 1Y Schematic - 165171 AND UP, Figure 8	12
Avionic Mux Bus 2X Schematic - 165171 AND UP, Figure 9	14
Avionic Mux Bus 2Y Schematic - 165171 AND UP, Figure 10	17

Record of Applicable Technical Directives

Type/ Number	Date	Title and ECP No.	Date Incorp.	Remarks
F/A-18 AFC 126	-	Addition of Deployable Flight Incident Recorder Set (DFIRS) (ECP-MDA-F18- 00321R1C1)	1 Feb 93	-
F/A-18 AFC 184	-	Incorporation of Havequick/Sincgars Wiring and Mounting Provisions (ECP-MDA-F18- 0292R2)	15 Aug 94	-
F/A-18 AFC 185	-	Incorporation of Havequick/Sincgars (ECP- MDA-F18-0292R1A3R2)	15 Aug 94	-

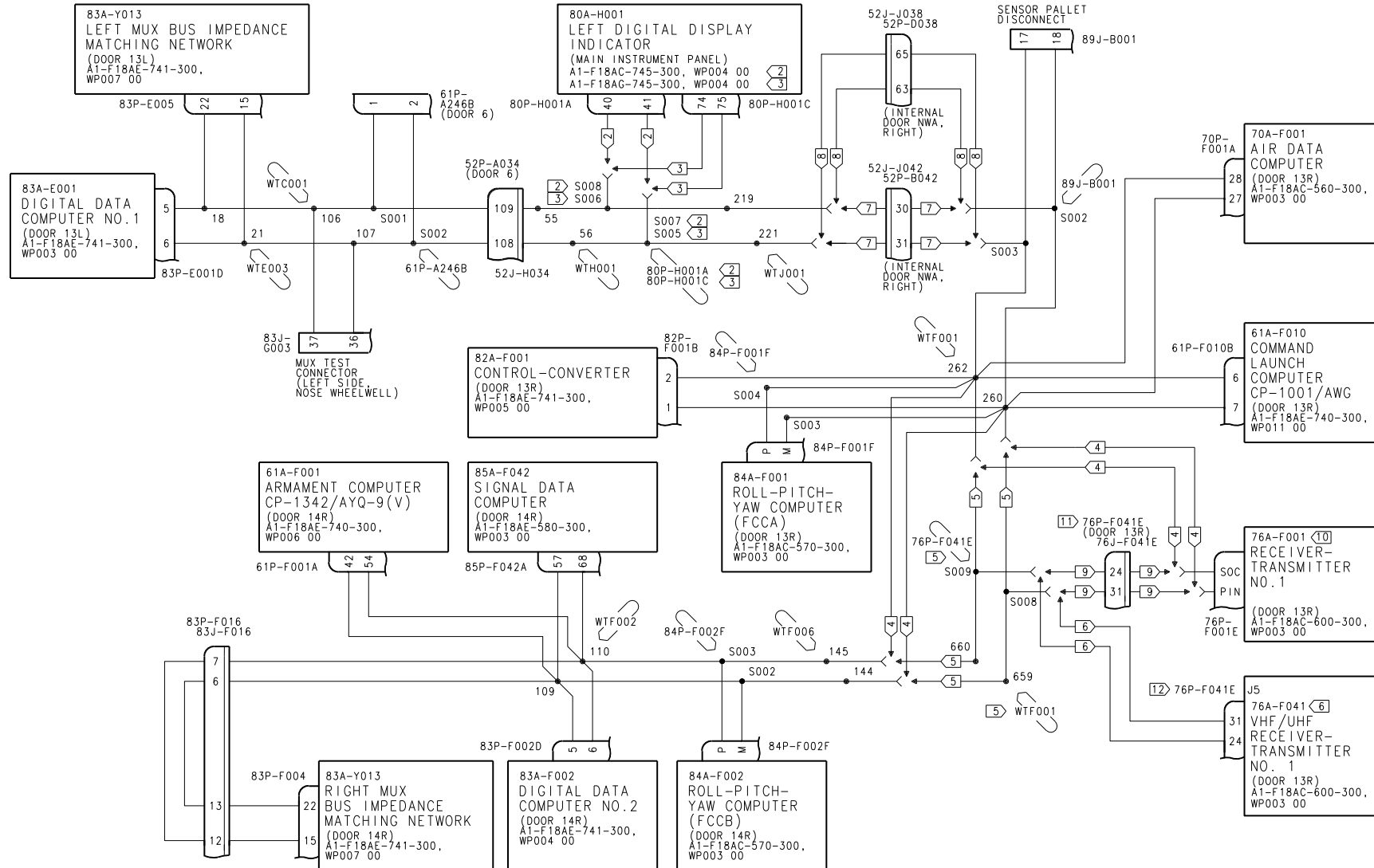
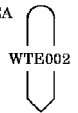


Figure 1.

Figure 1. Avionic Mux Bus 1X Schematic -163427 THRU 164980

SPLICE AREA



1. NONSTANDARD SYMBOL:

- 2 163427 THRU 163782.
- 3 163985 AND UP.
- 4 163427 THRU 163782; ALSO 163985 THRU 164068 BEFORE F/A-18 AFC 184.
- 5 164196 AND UP ; ALSO 163985 THRU 164068 AFTER F/A-18 AFC 184.
- 6 164945 AND UP; ALSO 163985 THRU 164912 AFTER F/A-18 AFC 185.
- 7 163427 THRU 164014.
- 8 164015 AND UP.
- 9 164196 THRU 164912; ALSO 163985 THRU 164068 AFTER F/A-18 AFC 184 BUT BEFORE F/A-18 AFC 185.
- 10 163427 THRU 163782; ALSO 163985 THRU 164912 BEFORE F/A-18 AFC 185.
- 11 ON 164196 THRU 164912; ALSO 163985 THRU 164068 AFTER F/A-18 AFC 184 BUT BEFORE F/A-18 AFC 185, CONNECTOR 76P-F041E MATES WITH 76J-F041E ON JUMPER BUNDLE.
- 12 ON 164945 AND UP; ALSO 163985 THRU 164912 AFTER F/A-18 AFC 185, CONNECTOR 76P-F041E MATES WITH J5 ON VHF/UHF RECEIVER-TRANSMITTER NO 1.

Figure 1.

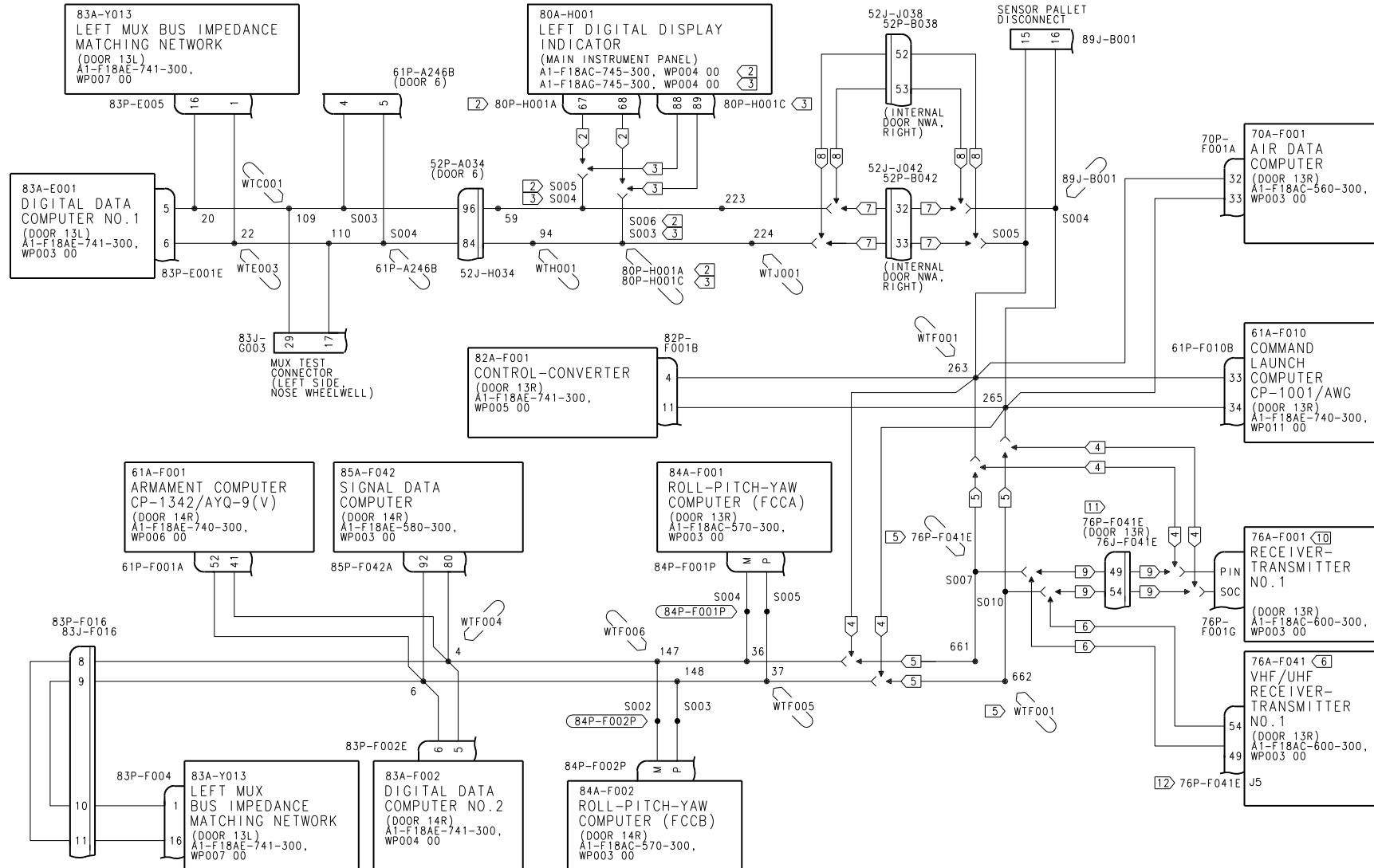
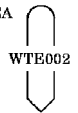


Figure 2.

SPLICE AREA



- 2 163427 THRU 163782.
- 3 163985 AND UP.
- 4 163427 THRU 163782; ALSO 163985 THRU 164068 BEFORE F/A-18 AFC 184.
- 5 164196 AND UP ; ALSO 163985 THRU 164068 AFTER F/A-18 AFC 184.
- 6 164945 AND UP; ALSO 163985 THRU 164912 AFTER F/A-18 AFC 185.
- 7 163427 THRU 164014.
- 8 164015 AND UP.
- 9 164196 THRU 164912; ALSO 163985 THRU 164068 AFTER F/A-18 AFC 184 AND BEFORE AFC F/A-18 AFC 185.
- 10 163427 THRU 163782; ALSO 163985 THRU 164912 BEFORE F/A-18 AFC 185.
- 11 ON 164196 THRU 164912; ALSO 163985 THRU 164068 AFTER F/A-18 AFC 184 BUT BEFORE F/A-18 AFC 185, CONNECTOR 76P-F041E MATES WITH 76J-F041E ON JUMPER BUNDLE.
- 12 ON 164945 AND UP; ALSO 163985 THRU 164912 AFTER F/A-18 AFC 185, CONNECTOR 76P-F041E MATES WITH J5 ON VHF/UHF RECEIVER-TRANSMITTER NO 1.

Figure 2. Avionic Mux Bus 1Y Schematic - 163427 THRU 164980

Figure 2.

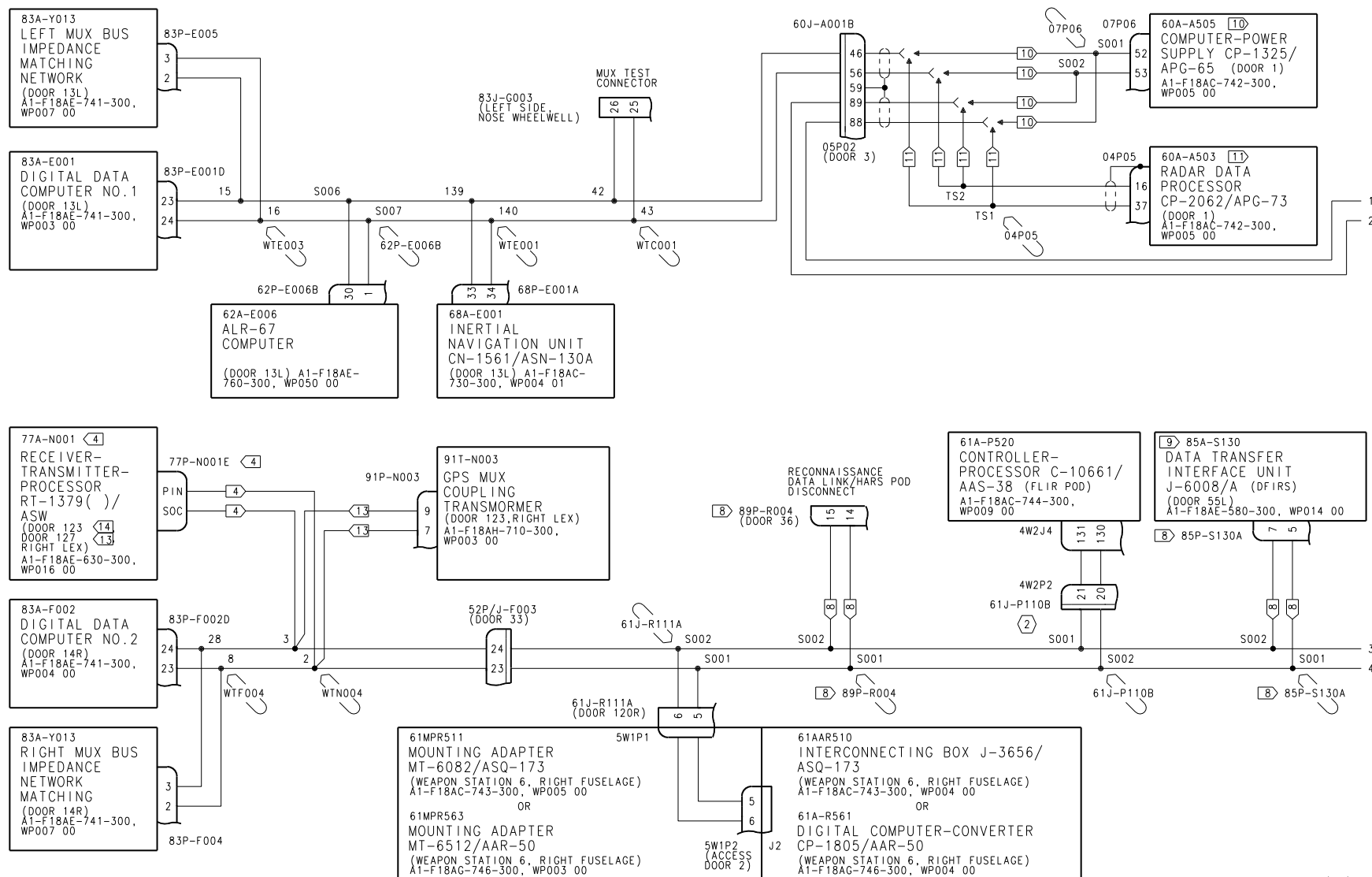


Figure 3.

Figure 3. Avionic Mux Bus 2X Schematic - 163985 THRU 164980 (Sheet 1)

Figure 3.

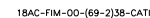


Figure 3.

Figure 3. Avionic Mux Bus 2X Schematic - 163985 THRU 164980 (Sheet 2)

1. NONSTANDARD SYMBOL:

EA
WTE002

- 2 WHEN FLIR POD IS INSTALLED, ACCESS TO 61J-P110B IS THROUGH FORWARD POD DOOR. WHEN FLIR POD IS NOT INSTALLED, ACCESS TO 61J-P110B IS THROUGH DOOR 120L.
- 3 F/A-18C.
- 4 F/A-18D.
- 5 F/A-18C, F/A-18D 163985 THRU 164272.
- 6 F/A-18D 164279 AND UP.
- 7 163985 THRU 164068 BEFORE F/A-18 AFC 184.
- 8 164196 AND UP; ALSO 163985 THRU 164068 AFTER F/A-18 AFC 184.
- 9 164725 AND UP; ALSO 164627 THRU 164724 AFTER F/A-18 AFC 126.
- 10 163985 THRU 164897.
- 11 164898 AND UP.
- 12 164945 AND UP ; ALSO 163985 THRU 164912 AFTER F/A-18 AFC 185.
- 13 164945 AND UP.
- 14 F/A-18D 164945 AND UP.
- 15 164196 AND UP; ALSO 163985 THRU 164068 AFTER F/A-18 AFC 184 BUT BEFORE F/A-18 AFC 185..
- 16 163427 THRU 163782; ALSO 163985 THRU 164912 BEFORE F/A-18 AFC 185.
- 17 ON 164196 THRU 164912; ALSO 163985 THRU 164068 AFTER F/A-18 AFC 184 BUT BEFORE F/A-18 AFC 185, CONNECTOR 76P-F042E MATES WITH 76J-F042E ON JUMPER BUNDLE.
- 18 ON 164945 AND UP; ALSO 163985 THRU 164912 AFTER F/A-18 AFC 185, CONNECTOR 76P-F042E MATES WITH J5 ON VHF/UHF RECEIVER-TRANSMITTER NO 1.

Figure 3.

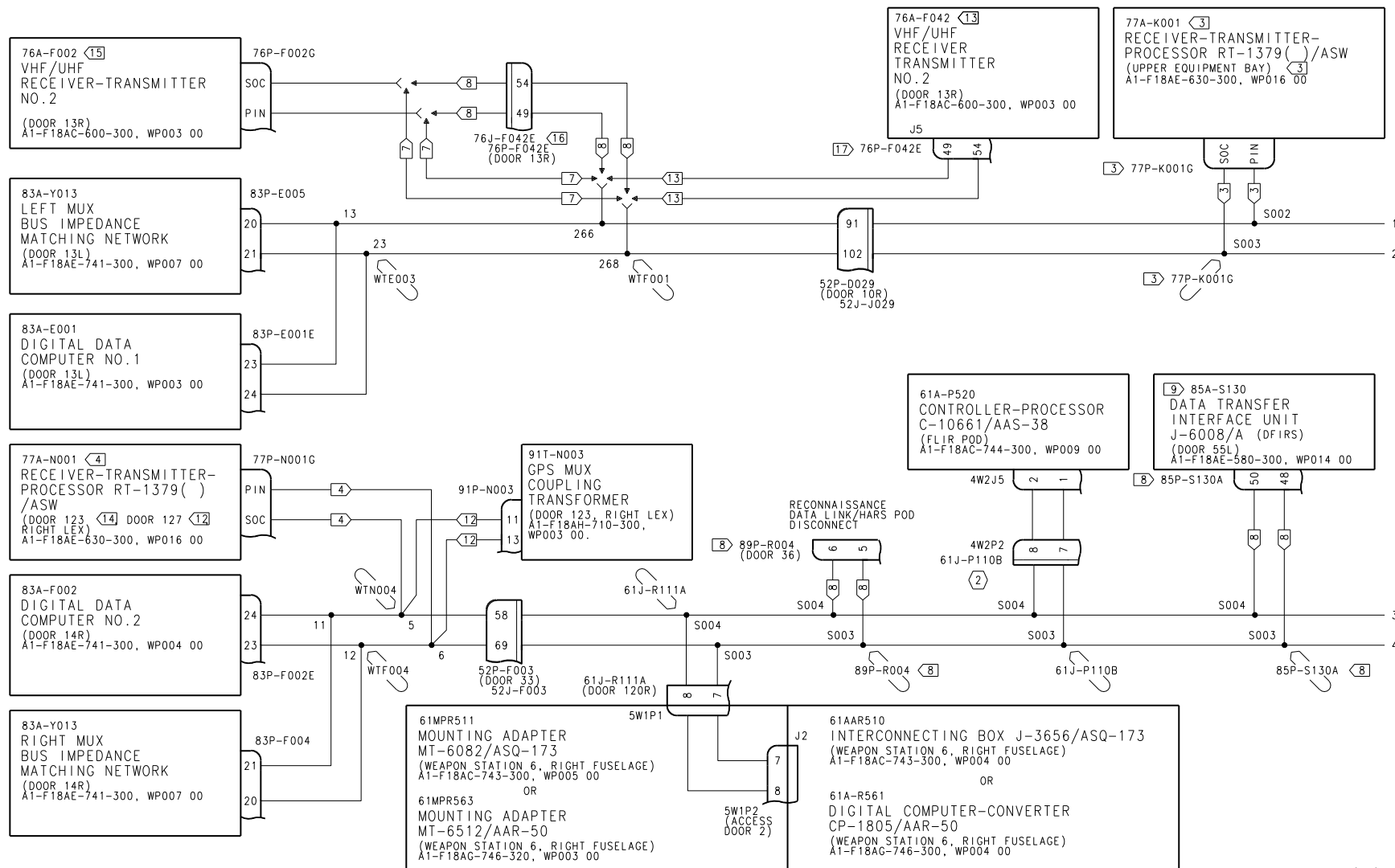


Figure 4. Avionic Mux Bus 2Y Schematic - 163985 THRU 164980 (Sheet 1)

18AC-FIM-00-(71-1)38-CAT1

Figure 4.

Figure 4.

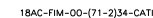


Figure 4.

1. NONSTANDARD SYMBOL:

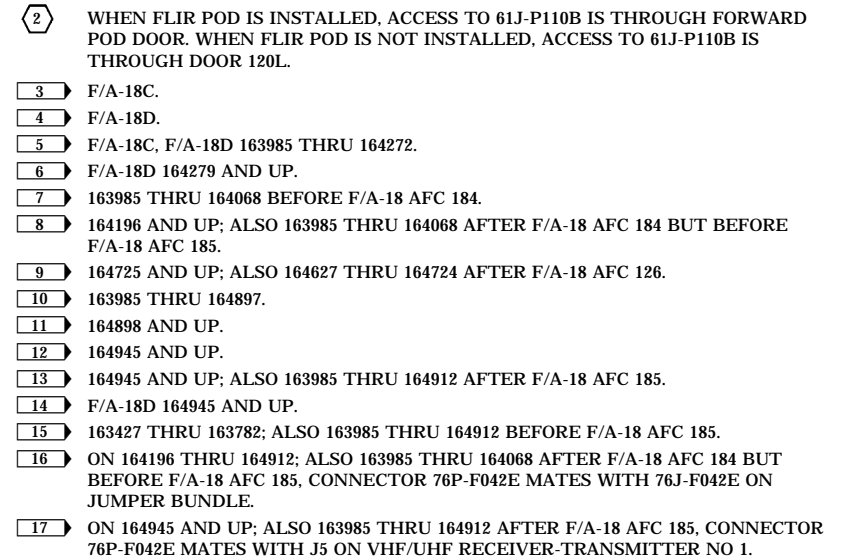


Figure 4.

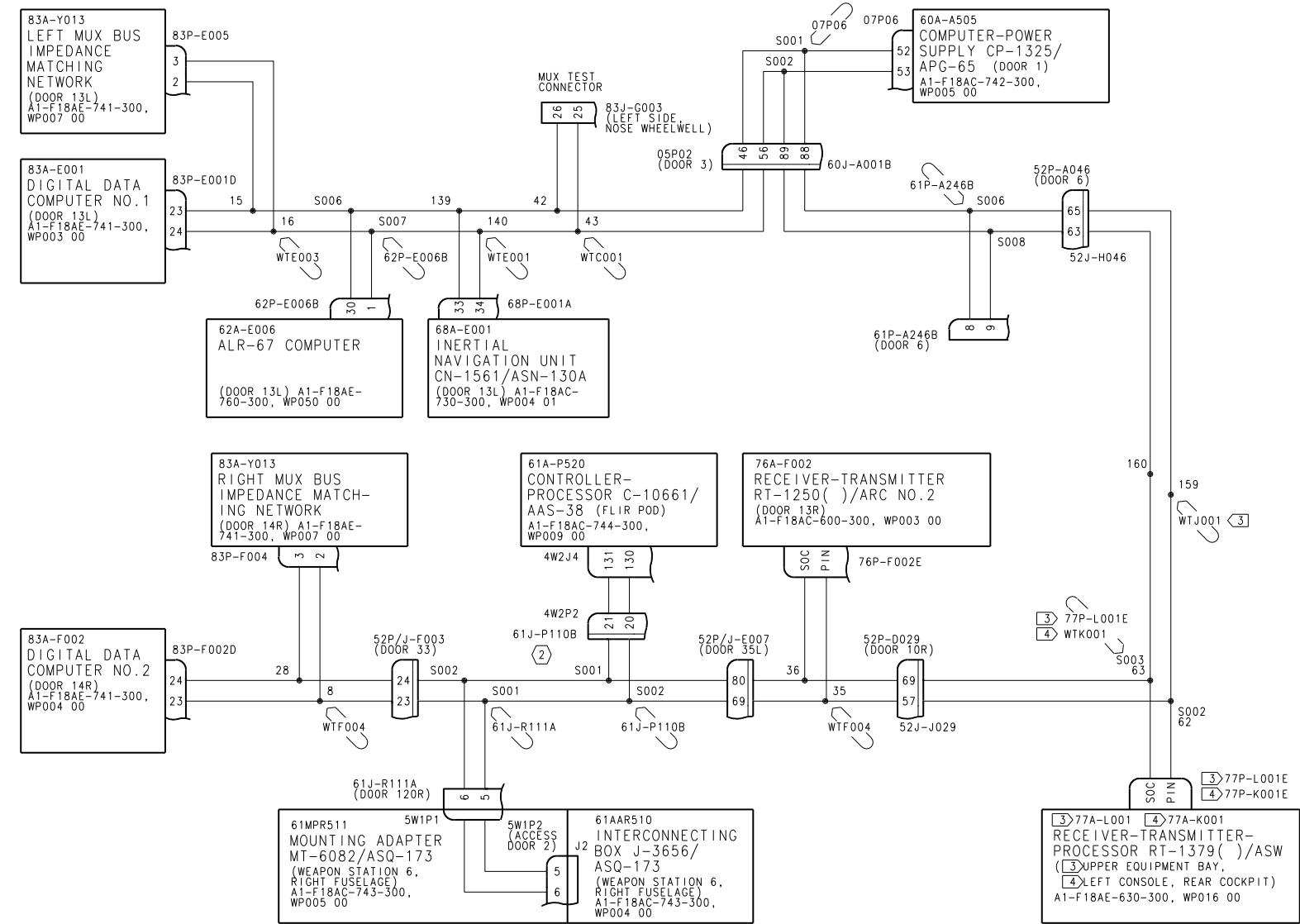


Figure 5.

Figure 5. Avionic Mux Bus 2X Schematic - 163427 THRU 163782

1. NONSTANDARD SYMBOL:

LEGEND

SPLICE AREA

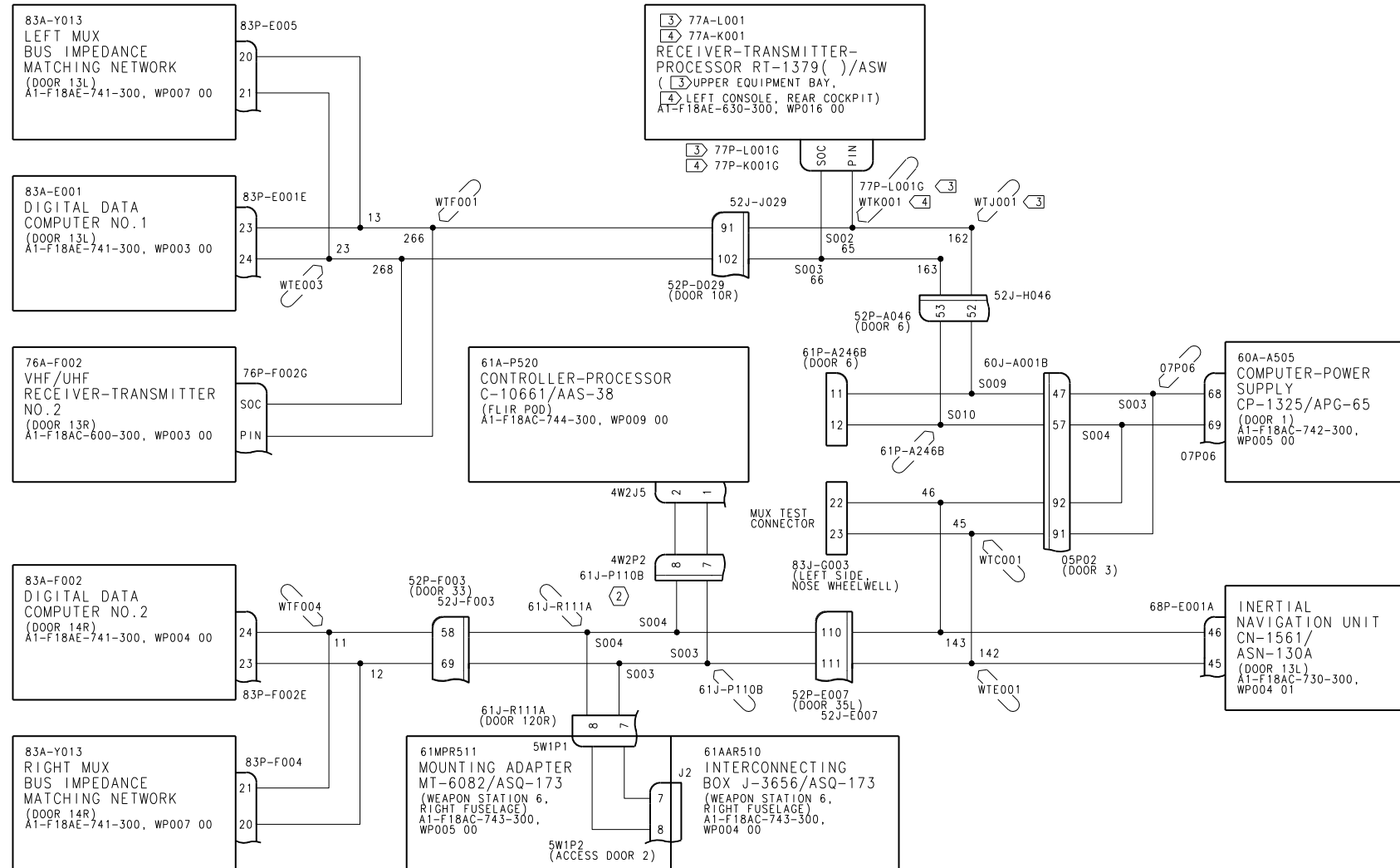
WTE002

2 WHEN FLIR POD IS INSTALLED, ACCESS TO 61J-P110B IS THROUGH FORWARD POD DOOR. WHEN FLIR POD IS NOT INSTALLED, ACCESS TO 61J-P110B IS THROUGH DOOR 120L.

3 F/A-18C.

4 F/A-18D.

Figure 5.



1. NONSTANDARD SYMBOL:

EA
WTE002

4 F/A-18D.

Figure 6.

Figure 6. Avionic Mux Bus 2Y Schematic - 163427 THRU 163782

Figure 6.

Change 8

Page 10

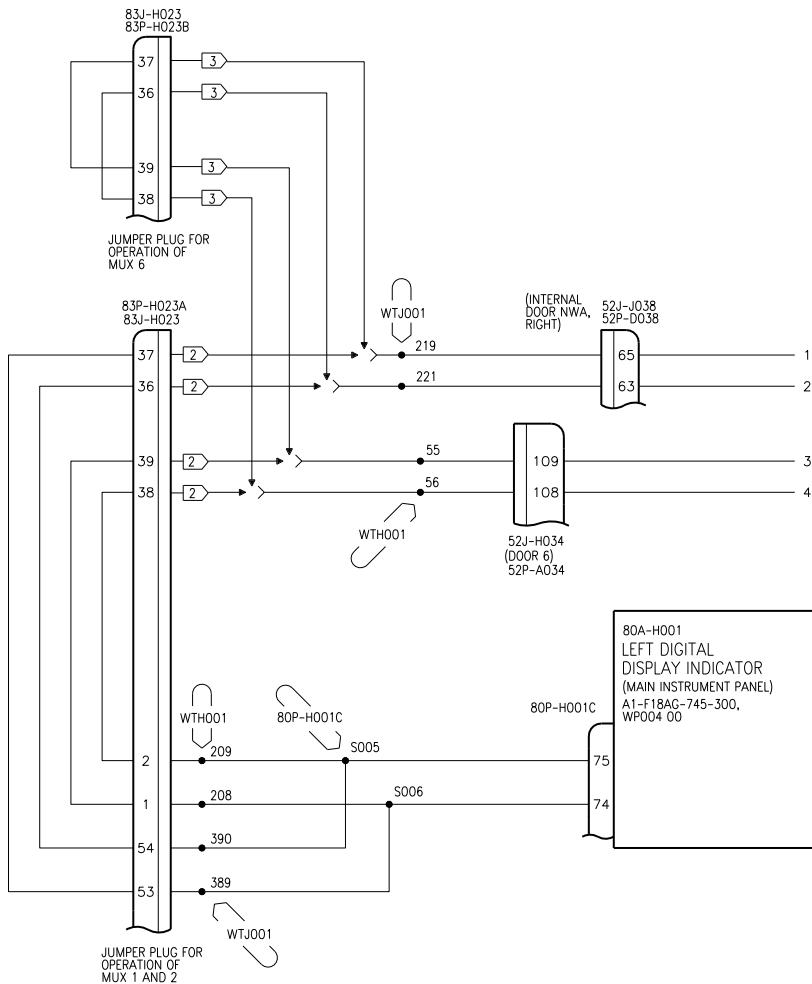


Figure 7. Avionic Mux Bus 1X Schematic - 165171 AND UP (Sheet 1)

18AC-FIM-00-(72-1)38-CAT

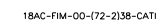


Figure 7.

Figure 7. Avionic Mux Bus 1X Schematic - 165171 AND UP (Sheet 2)

Figure 7. ■

Change 8

Page 12

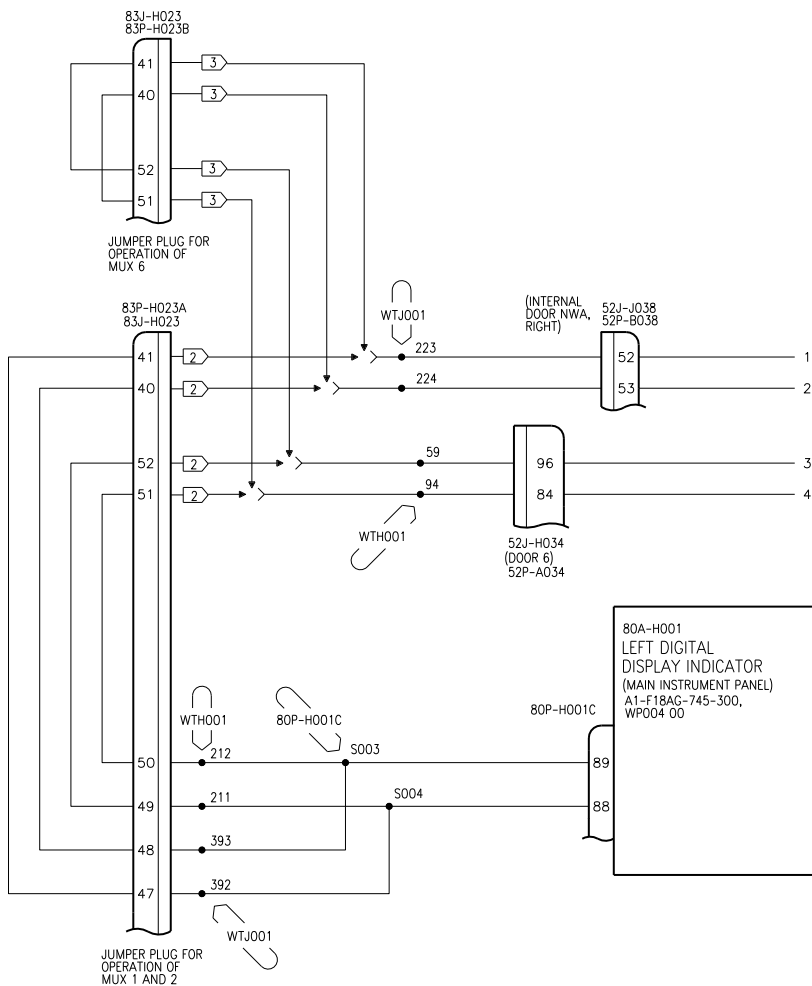
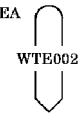


Figure 8. Avionic Mux Bus 1Y Schematic - 165171 AND UP (Sheet 1)



SPLICE AREA



- 2 WITH DIGITAL DATA COMPUTER CONFIG/IDENT 11C AND UP (A1-F18AC-SCM-000)
- 3 WITHOUT DIGITAL DATA COMPUTER CONFIG/IDENT 11C (A1-F18AC-SCM-000)

Figure 8.

Figure 8. Avionic Mux Bus 1Y Schematic - 165171 AND UP (Sheet 2)

Figure 8.

18AC-FIM-00-(73-2)38-CAT

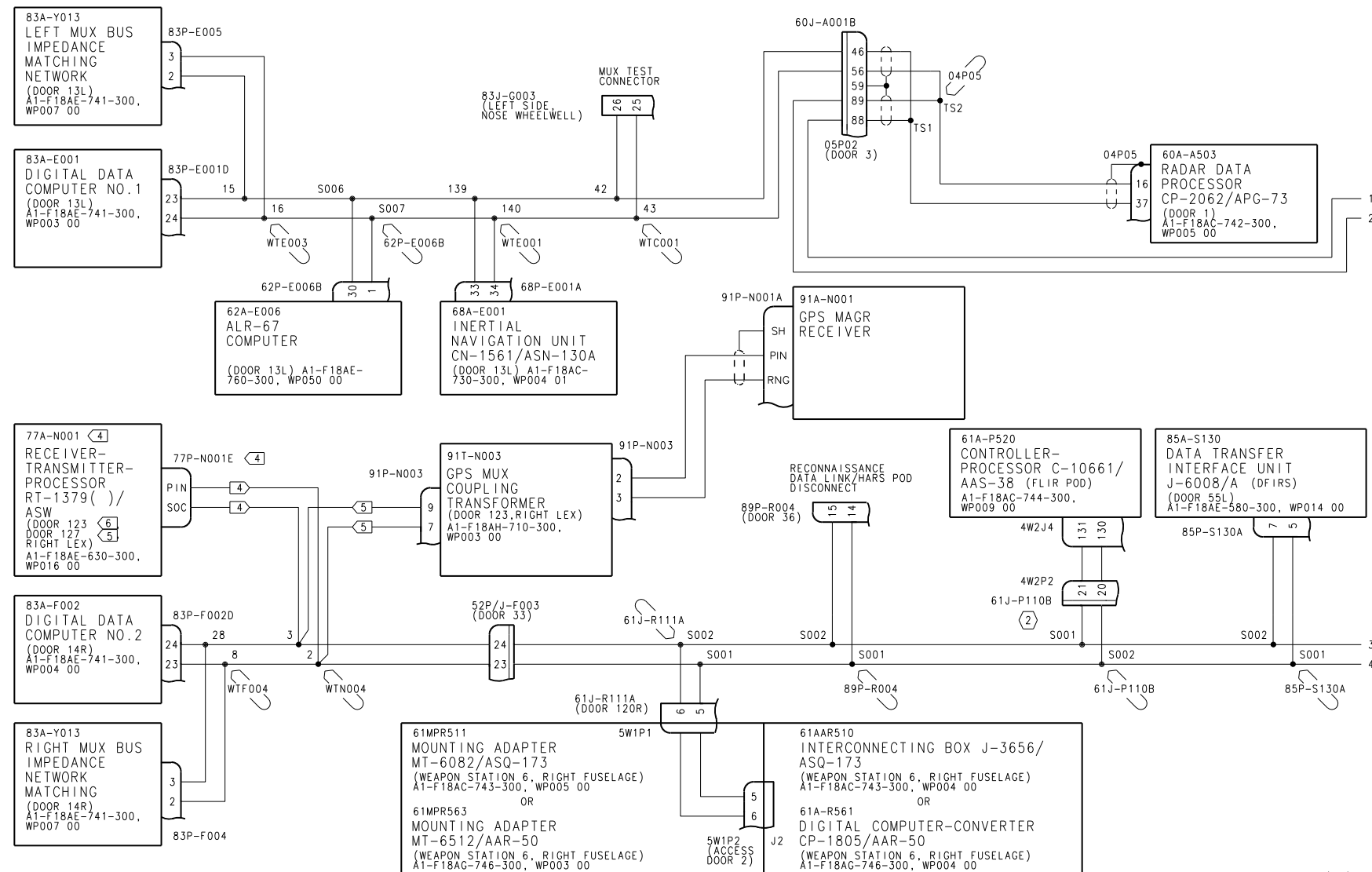


Figure 9.

Figure 9. Avionic Mux Bus 2X Schematic - 165171 AND UP (Sheet 1)

Figure 9.

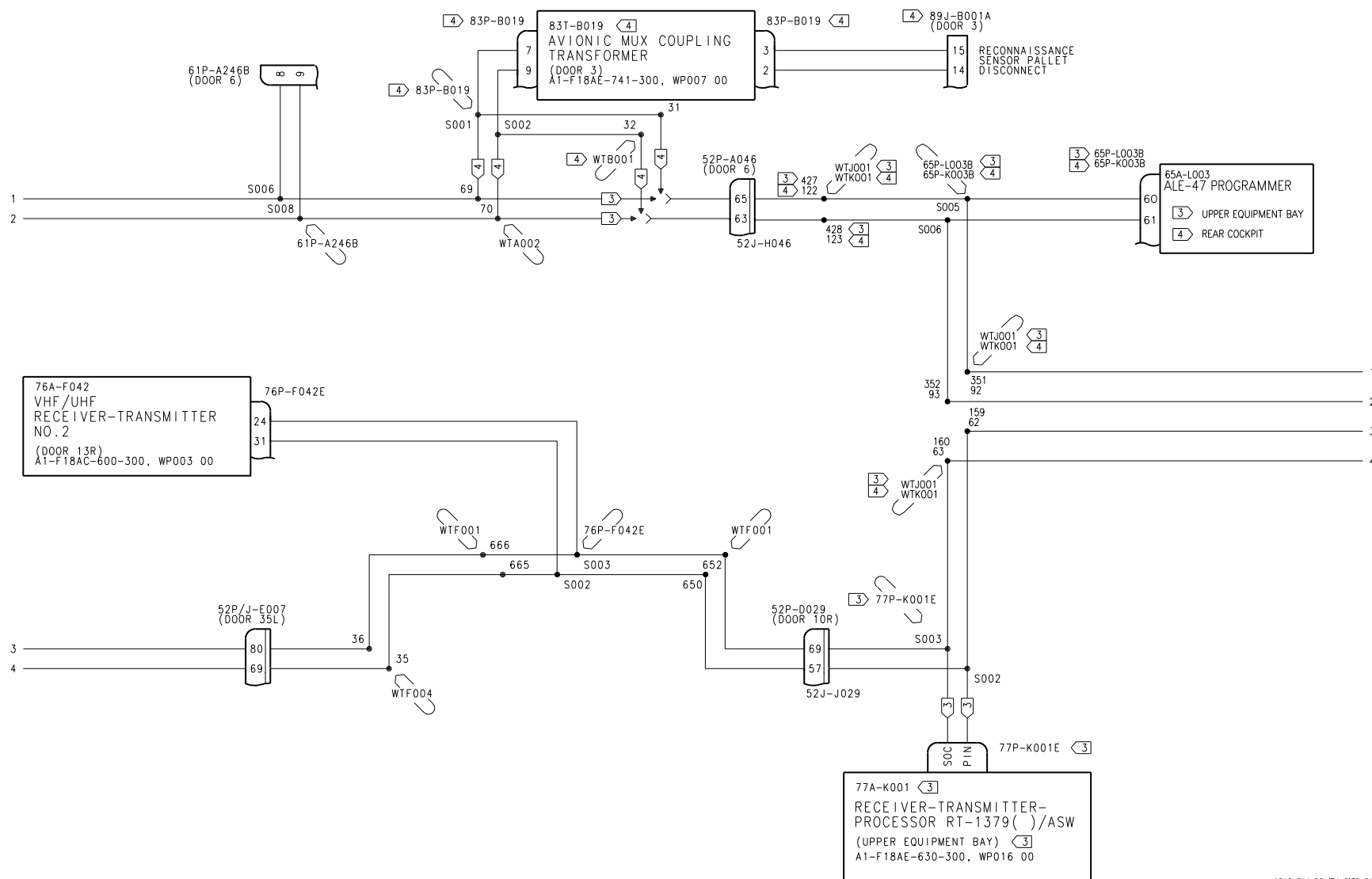
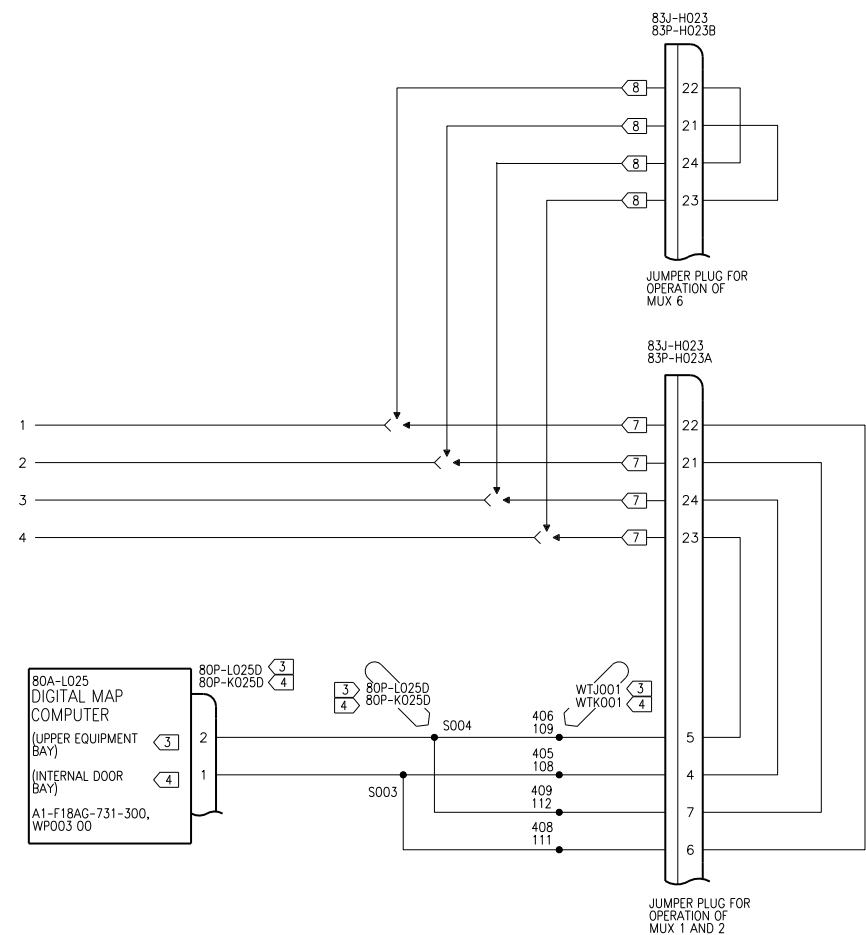


Figure 9.

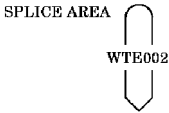
Figure 9. Avionic Mux Bus 2X Schematic - 165171 AND UP (Sheet 2)

Figure 9.



LEGEND

1. NONSTANDARD SYMBOL:



2

WHEN FLIR POD IS INSTALLED, ACCESS TO 61J-P110B IS THROUGH FORWARD
POD DOOR. WHEN FLIR POD IS NOT INSTALLED, ACCESS TO 61J-P110B IS
THROUGH DOOR 120L.

3

F/A-18C.

4

F/A-18D.

5

164945 AND UP.

6

F/A-18D 164945 AND UP.

7

WITHOUT DIGITAL DATA COMPUTER CONFIG/IDENT 11C (A1-F18AC-SCM-000)

8

WITH DIGITAL DATA COMPUTER CONFIG/IDENT 11C AND UP
(A1-F18AC-SCM-000).

Figure 9.

Figure 9. Avionic Mux Bus 2X Schematic - 165171 AND UP (Sheet 3)

Figure 9. ■

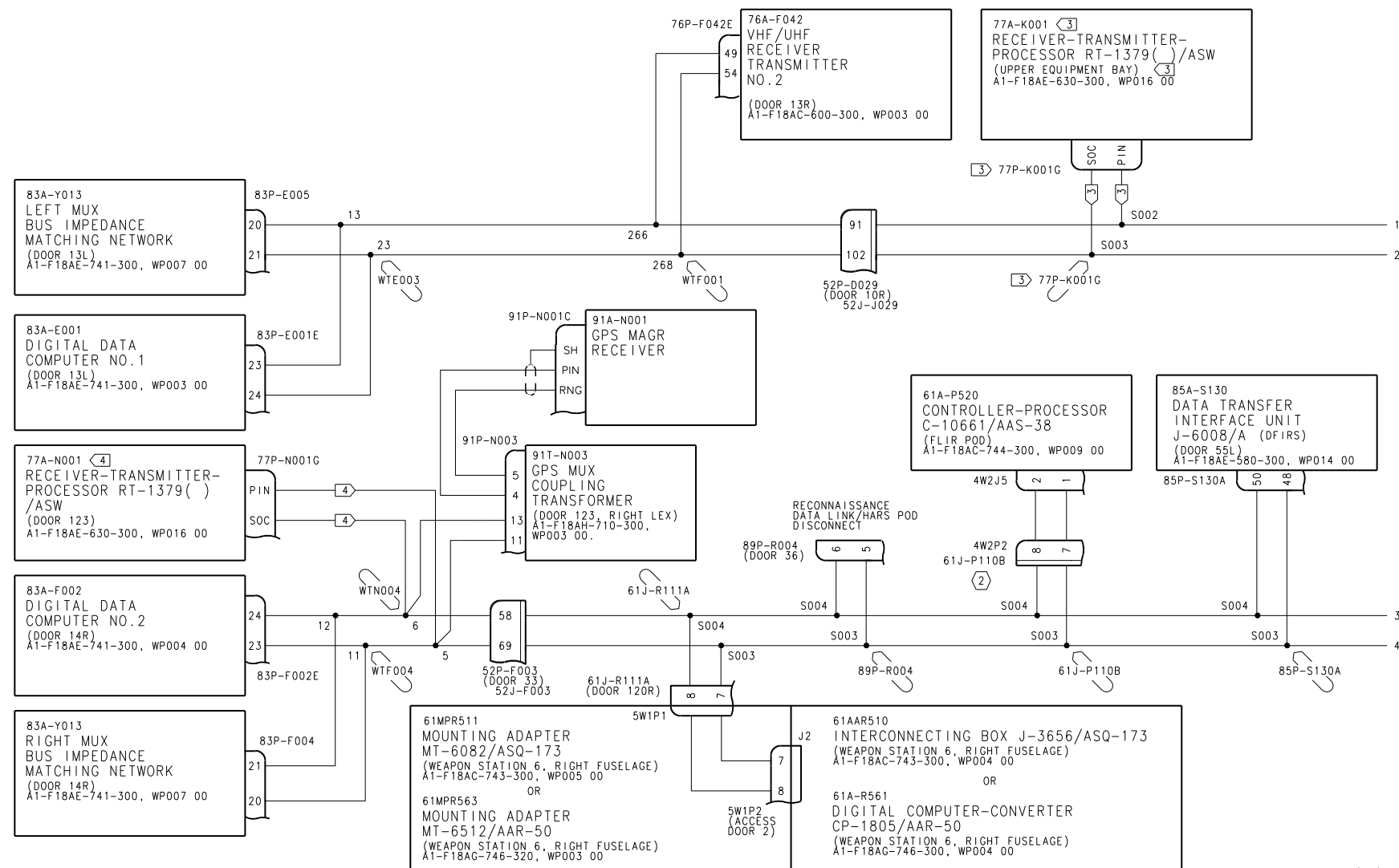


Figure 10.

18AC-FIM-00-(75-1)38-CAT

Figure 10.

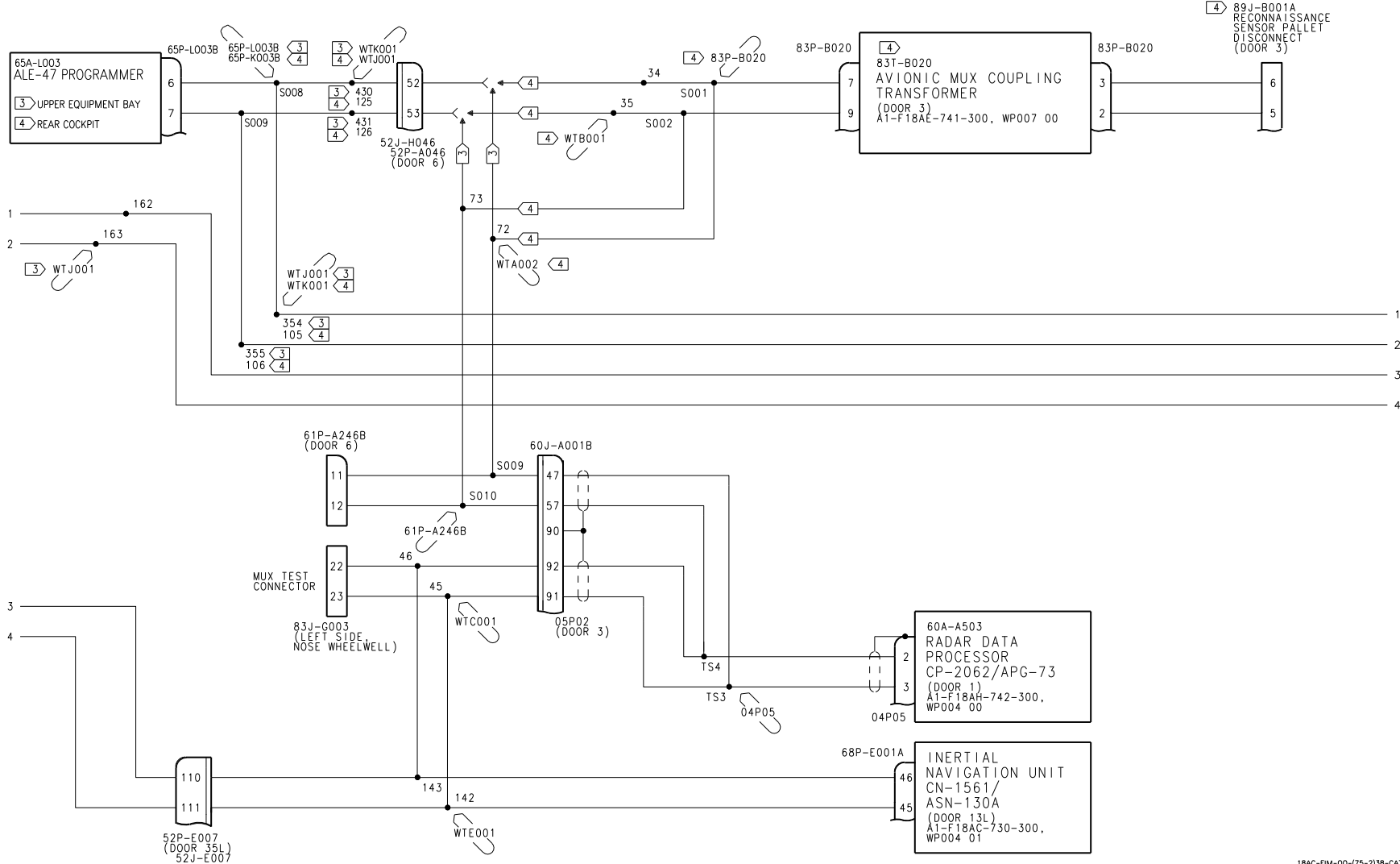


Figure 10. Avionic Mux Bus 2Y Schematic - 165171 AND UP (Sheet 2)

Figure 10.

Figure 10.

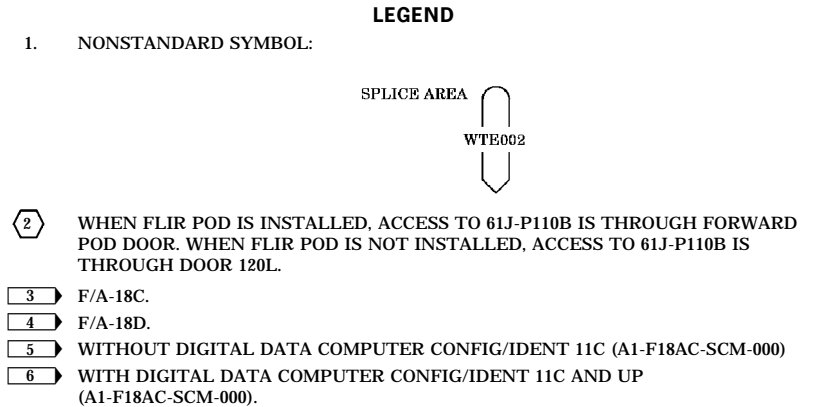


Figure 10. Avionic Mux Bus 2Y Schematic - 165171 AND UP (Sheet 3)

Figure 10. ■

ORGANIZATIONAL MAINTENANCE

FAULT ISOLATION MANUAL

TROUBLESHOOTING PROCEDURE

This WP supersedes WP114 03, dated 1 November 1993.

Reference Material

Line Maintenance Procedures	A1-F18AC-LMM-000
Mission Computer System	A1-F18AC-741-200
Component Locator	WP006 00
Mission Computer System	A1-F18AE-741-200
Component Locator	WP006 00
Software Configuration Manual	A1-F18AC-SCM-000
Program Load CONFIG/IDENT Verification	WP004 00
Fault Isolation Manual - Memory Inspect Access	A1-F18AC-FIM-100
Alphabetical Index	WP001 00

Alphabetical Index

Subject	Page No.
Introduction	1
Memory Inspect Displays, Figure 1	5
Table 1	2

Record of Applicable Technical Directives

None

1. INTRODUCTION.

2. This work package (WP) provides memory inspect (MI) procedures used within this manual. This WP is referenced from procedures that use MI.

3. Table 1 provides the common steps used to do MI. This procedure uses the unit address and ref code from the procedure that references this WP to determine the MI address. The Fault Isolation Manual - Memory Inspect Access

(A1-F18AC-FIM-100) is used for ref code to memory inspect address conversion for Operational Flight Program (OFP) CONFIG/IDENT numbers assigned to MC1 (unit address 28).

Table 1. Memory Inspect Procedure

NOTE

The CONFIG/IDENT number must be known to accurately memory inspect a component. If the CONFIG/IDENT number is not known, refer to A1-F18AC-SCM-000 to determine the CONFIG/IDENT number.

- a. Determine the CONFIG/IDENT number of MC1 - Digital Data Computer No. 1 (A1-F18AC-SCM-000).
- b. Use ref code identified in procedure and CONFIG/IDENT from step a to determine ref code MI address.

NOTE

Figure 1 shows memory inspect displays.

- c. Apply electrical power (A1-F18AC-LMM-000).
- d. On GND PWR control panel assembly, set and hold 1 switch to A ON and 2 switch to B ON for 3 seconds.
- e. On left and right digital display indicator (LDDI and RDDI), set power switches to DAY or NIGHT and allow 2 minute warmup. Adjust BRT and CONT controls for best display.
- f. On RDDI:
 - (1) Press and release MENU pushbutton switch until BIT pushbutton switch is displayed.
 - (2) Press BIT pushbutton switch.
 - (3) Press MI pushbutton switch.
- g. On Electronic Equipment Control C-10380/ASQ (equipment control), adjust BRT/DIM control for best display and do substeps below:
 - (1) Verify equipment control displays UNIT and ADDR options.
 - (2) Press UNIT option select switch.

Table 1. Memory Inspect Procedure (Continued)

(3) Press keyboard switch(s) to enter UNIT address from procedure.

(4) Verify scratch pad displays correct UNIT address.

(5) Press ENT.

NOTE

On RDDI, unit address is a two digit display. When unit address is a single digit, a 0 (zero) is displayed before the unit address. Example - unit address 6 is displayed as 06.

h. Verify RDDI displays correct unit address.

i. On equipment control, do substeps below:

(1) Press ADDR option keyboard switch.

(2) Press keyboard switches to enter applicable ref code MI address.

(3) Verify scratch pad displays correct address.

(4) Press ENT.

NOTE

WITH DIGITAL DATA COMPUTER CONFIG/IDENT 89A, 92A, AND 91C (A1-F18AC-SCM-000), on RDDI, ADDR readout is a six digit display. When ref code address is less than six digits, a 0 (zero) is displayed before the address. Example - address 4444 is displayed as 004444.

WITH DIGITAL DATA COMPUTER CONFIG/IDENT 09C AND UP (A1-F18AC-SCM-000), on RDDI, ADDR readout is an eight digit display. When ref code address is less than eight digits, a 0 (zero) is displayed before the address. Example - address 7004444 is displayed as 07004444.

j. Verify RDDI displays correct address.

Table 1. Memory Inspect Procedure (Continued)**NOTE**

DDI DATA readout is 6 octal digits, when an X is indicated in an octal digit location in this procedure, that digit is ignored.

k. Interpret DATA readout.

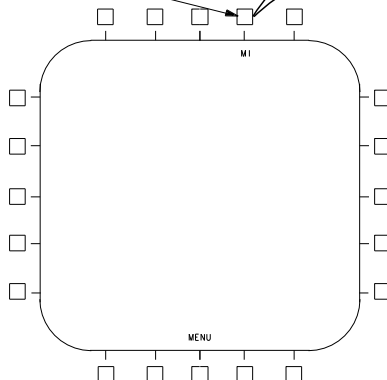
NOTE

When memory inspecting more than one address and the address numbers are close, use the address increment/decrement pushbutton switches on MI display to advance/decrease the address. Pressing the increment pushbutton switch increases the address location by one. Pressing the decrement switch decreases the address location by one.



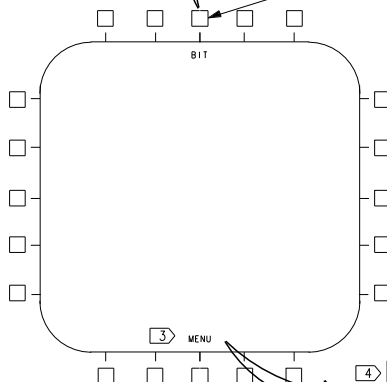
M1 PUSHBUTTON
PRESSED, PROVIDES
MEMORY INSPECT
DISPLAY ON BIT
CONTROL DISPLAY
AND UNIT AND ADDR
OPTIONS ON ELECTRONIC
EQUIPMENT CONTROL
C-10380/ASQ.

SEE
SHEET 2



BIT CONTROL DISPLAY

BIT PUSHBUTTON
PRESSED, PROVIDES
BIT CONTROL DISPLAY



MENU DISPLAY

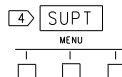
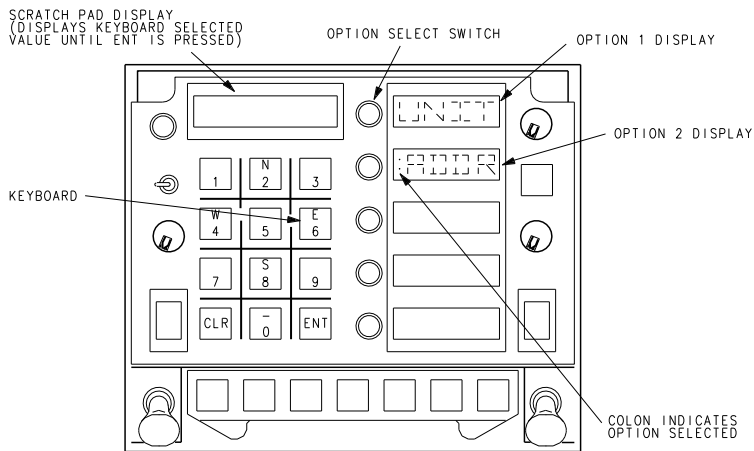
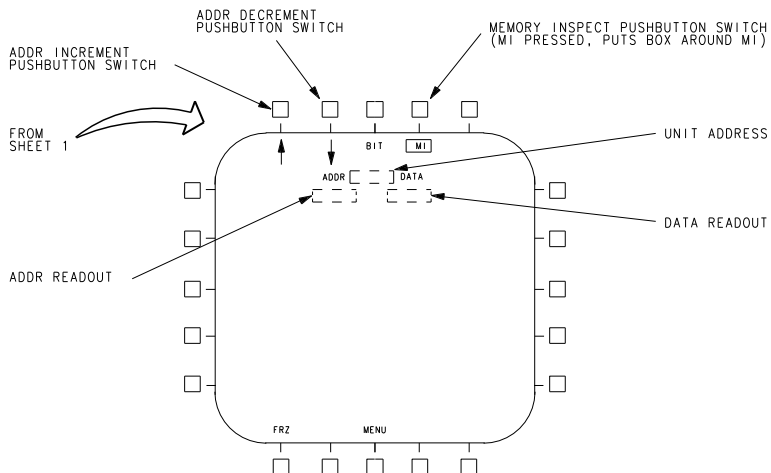


Figure 1. Memory Inspect Displays (Sheet 1)



ELECTRONIC EQUIPMENT CONTROL C-10380/ASQ

LEGEND

1. WHEN A FUNCTION ON INDICATOR IS SELECTED, SWITCH NOMENCLATURE IS BOXED. PRESSING SWITCH AGAIN WILL DESELECT FUNCTION AND REMOVE BOX AROUND NOMENCLATURE.
2. ADDITIONAL DISPLAYS MAY APPEAR ON INDICATOR BUT ARE NOT USED IN THIS TEST.
3. F/A-18A AND F/A-18B
4. F/A-18C AND F/A-18D

Figure 1. Memory Inspect Displays (Sheet 2)

ORGANIZATIONAL MAINTENANCE

FAULT ISOLATION MANUAL

TROUBLESHOOTING PROCEDURE

EFFECTIVITY: F/A-18A AND F/A-18B

This WP supersedes WP115 00, dated 15 December 1987.

Reference Material

Line Maintenance Access Doors.....	A1-F18AC-LMM-010
Line Maintenance Procedures	A1-F18AC-LMM-000
Mission Computer System	A1-F18AC-741-200
Component Locator.....	WP006 00
Fault Isolation Manual.....	A1-F18AC-FIM-000
Troubleshooting Procedure.....	WP114 03

Alphabetical Index

Subject	Page No.
Table 1.....	1
Table 2.....	4

Record of Applicable Technical Directives

None

Table 1. Multiple Terminal Fail Troubleshooting

Support Equipment Required	
Part Number or Type Designation	Nomenclature
1502-04	Time Domain Reflectometer
74D420048-1001	TDR Adapter Kit
Materials Required	
None	







Table 1. Multiple Terminal Fail Troubleshooting (Continued)

NOTE		
<p>Terminal fail codes indicate two malfunctions exist. Malfunctions on both avionic mux bus wires must exist for a terminal fail code to exist. (Example: Avionic mux bus 2X high and 2X low must be open to indicate a terminal fail). Troubleshooting procedures for terminal fails isolate to the malfunction nearest to Digital Data Computer No. 1 on the avionic mux bus. Additional troubleshooting may be required to isolate to the second defective wire/component.</p> <p>Avionics Mux Bus 1X Schematic (WP114 00) may be used as an aid when doing this procedure.</p> <p>For component locator, refer to A1-F18AC-741-200, WP006 00.</p> <p>Memory Inspect data in this procedure is provided in WP114 03.</p> <p>Malfunction is caused by aircraft wiring.</p>		
Procedure	No	Yes
<p>a. Do substeps below:</p> <p>(1) Using unit address 28, memory inspect address for ref code BDMUX1 (table 2, WP114 03).</p> <p>(2) On RDDI, does DATA readout display any of the below:</p> <p style="padding-left: 40px;">X2XXXX</p> <p style="padding-left: 40px;">X6XXXX?</p>	e	b
<p>b. Do substeps below:</p> <p>(1) Turn off electrical power (A1-F18AC-LMM-000).</p> <p>(2) Open door 6 (A1-F18AC-LMM-010).</p> <p>(3) Disconnect 52P-A034 from bulkhead (door 6).</p> <p>(4) Remove internal door, NWA (A1-F18AC-LMM-010).</p> <p>(5) Disconnect 52P-D038 from bulkhead.</p> <p>(6) Remove left Digital Display Indicator (A1-F18AC-745-300, WP004 00).</p>		

Table 1. Multiple Terminal Fail Troubleshooting (Continued)

Procedure	No	Yes
<p>(7) Using time domain reflectometer (A1-F18AC-WRM-000) and table 2, test wiring from:</p> <p>52J-H034 pin 108 to 80P-H001A pin 41 52J-H034 pin 109 to 80P-H001A pin 40</p> <p>Does wiring test good?.....</p>	c	d
<p>c. Isolate and repair defective aircraft wiring (A1-F18A()-WDM-000) from:</p> <p>52J-H034 pin 108 to 80P-H001A pin S007 52J-H034 pin 109 to 80P-H001A pin S008</p> <p>and do step f.....</p>	-	-
<p>d. Isolate and repair defective aircraft wiring (A1-F18A()-WDM-000) from:</p> <p>52P-A034 pin 108 to 83P-E001D pin 6 52P-A034 pin 109 to 83P-E001D pin 5</p> <p>and do step f.....</p>	-	-
<p>e. Isolate and repair defective aircraft wiring (A1-F18A()-WDM-000) from:</p> <p>83P-E001E pin 5 to WTF001 pin 263 83P-E001E pin 6 to WTF001 pin 265</p> <p>and do step f.....</p>	-	-
<p>f. If disconnected, removed, or opened during this procedure, make sure the items listed below are connected, installed, or closed:</p> <p>(1) 52P-A034 (2) 52P-D038 (3) Door 6 (4) Internal door NWA (5) Left Digital Display Indicator</p>	-	-

Table 2. Avionic Mux Cable Parameters

Cable Number	Connector	Impedance (Ohms)	Dielectric Type	Cable Length (Inches)
U501K	52J-H034 pin 109 to 80P-H001A pin 40	68	PTFE	110  1
U502K	52J-H034 pin 108 to 80P-H001A pin 41	68	PTFE	112  2
				110  1
				112  2
LEGEND				
 1 F/A-18A				
 2 F/A-18B				

ORGANIZATIONAL MAINTENANCE

FAULT ISOLATION MANUAL

TROUBLESHOOTING PROCEDURE

EFFECTIVITY: F/A-18C AND F/A-18D

This WP supersedes WP115 01, dated 15 February 1992.

Reference Material

Line Maintenance Access Doors.....	A1-F18AC-LMM-010
Line Maintenance Procedures	A1-F18AC-LMM-000
Mission Computer System	A1-F18AE-741-200
Component Locator.....	WP006 00
Fault Isolation Manual.....	A1-F18AC-FIM-000
Troubleshooting Procedure.....	WP114 03

Alphabetical Index

Subject	Page No.
Table 1.....	1

Record of Applicable Technical Directives

None

Table 1. Multiple Terminal Fail Troubleshooting

Support Equipment Required	
Part Number or Type Designation	Nomenclature
1502-04	Time Domain Reflectometer
74D420048-1001	TDR Adapter Kit
Materials Required	
None	

Table 1. Multiple Terminal Fail Troubleshooting (Continued)

NOTE		
<p>Terminal fail codes indicate two malfunctions exist. Malfunctions on both avionic mux bus wires must exist for a terminal fail code to exist. (Example: Avionic mux bus 2X high and 2X low must be open to indicate a terminal fail). Troubleshooting procedures for terminal fails isolate to the malfunction nearest to Digital Data Computer No. 1 on the avionic mux bus. Additional troubleshooting may be required to isolate to the second defective wire/component.</p> <p>Avionics Mux Bus 1X Schematic (WP114 00) may be used as an aid when doing this procedure.</p> <p>For component locator, refer to A1-F18AE-741-200, WP006 00.</p> <p>Memory Inspect data in this procedure is provided in WP114 03.</p> <p>Malfunction is caused by aircraft wiring.</p>		
Procedure	No	Yes
<p>a. Do substeps below:</p> <p>(1) Using unit address 28, memory inspect address for ref code BDMUX1 (table 2, WP114 03).</p> <p>(2) On RDDI, does DATA readout display any of the below:</p> <p style="margin-left: 40px;">X2XXXX X6XXXX?</p> <p>b. Do substeps below:</p> <p>(1) Turn off electrical power (A1-F18AC-LMM-000).</p> <p>(2) Open door 6 (A1-F18AC-LMM-010).</p> <p>(3) Disconnect 52P-A034 from bulkhead (door 6).</p> <p>(4) Remove internal door, NWA (A1-F18AC-LMM-010).</p> <p>(5) ON 163472 THRU 164014, disconnect 52P-B042 from bulkhead. ON 164015 THRU 164980, disconnect 52P-D038 from bulkhead. ON 165171 AND UP, WITHOUT DIGITAL DATA COMPUTER CONFIG/IDENT 11C (A1-F18AC-SCM-000), disconnect 83P-H023A from bulkhead. ON 165171 AND UP, WITH DIGITAL DATA COMPUTER CONFIG/IDENT 11C AND UP (A1-F18AC-SCM-000), disconnect 83P-H023B from bulkhead.</p> <p>(6) ON 163427 THRU 164980, AND 165171 AND UP, WITHOUT DIGITAL DATA COMPUTER CONFIG/IDENT 11C (A1-F18AC-SCM-000), remove left Digital Display Indicator (LDDI) (A1-F18A()-745-300, WP004 00).</p>	e	b

Table 1. Multiple Terminal Fail Troubleshooting (Continued)

Procedure	No	Yes
(7) Using time domain reflectometer and A1-F18AE-WRM-000 test wiring from: ON 163427 THRU 163782, 52J-H034 pin 108 to 80P-H001A pin 41 52J-H034 pin 109 to 80P-H001A pin 40 ON 163985 THRU 164980, 52J-H034 pin 108 to 80P-H001C pin 75 52J-H034 pin 109 to 80P-H001C pin 74 ON 165171 AND UP, WITHOUT DIGITAL DATA COMPUTER CONFIG/IDENT 11C (A1-F18AC-SCM-000), 83J-H023 pin 2 to 80P-H001C pin 75 83J-H023 pin 1 to 80P-H001C pin 74 83J-H023 pin 39 to 52J-H034 pin 109 83J-H023 pin 38 to 52J-H034 pin 108 ON 165171 AND UP, WITH DIGITAL DATA COMPUTER CONFIG/IDENT 11C AND UP (A1-F18AC-SCM-000), 83J-H023 pin 39 to 52J-H034 pin 109 83J-H023 pin 38 to 52J-H034 pin 108 Does wiring test good?		
c. Isolate and repair defective aircraft wiring (A1-F18A()-WDM-000) and do step h.....	-	-
d. Isolate and repair defective aircraft wiring (A1-F18A()-WDM-000) from: 52P-A034 pin 108 to 83P-E001D pin 6 52P-A034 pin 109 to 83P-E001D pin 5 and do step h	-	-
e. Do substeps below: (1) Turn off electrical power (A1-F18AC-LMM-000). (2) Open door 6 (A1-F18AC-LMM-010). (3) Disconnect 52P-A034 from bulkhead (door 6). (4) Remove internal door, NWA (A1-F18AC-LMM-010). (5) Disconnect 52P-B042 from bulkhead. (6) Remove left Digital Display Indicator (A1-F18AC-745-300, WP004 00).		

Table 1. Multiple Terminal Fail Troubleshooting (Continued)

Procedure	No	Yes
<p>(7) Using time domain reflectometer and A1-F18AE-WRM-000, test wiring from:</p> <p>ON 163427 THRU 163782,</p> <p>52J-H034 pin 96 to 80P-H001A pin 67 52J-H034 pin 84 to 80P-H001A pin 68</p> <p>ON 163985 THRU 164980,</p> <p>52J-H034 pin 96 to 80P-H001C pin 88 52J-H034 pin 84 to 80P-H001C pin 89</p> <p>ON 165171 AND UP, WITHOUT DIGITAL DATA COMPUTER CONFIG/IDENT 11C (A1-F18AC-SCM-000),</p> <p>83J-H023 pin 50 to 80P-H001C pin 89 83J-H023 pin 49 to 80P-H001C pin 88 83J-H023 pin 51 to 52J-H034 pin 84 83J-H023 pin 52 to 52J-H034 pin 96</p> <p>ON 165171 AND UP, WITH DIGITAL DATA COMPUTER CONFIG/IDENT 11C AND UP (A1-F18AC-SCM-000),</p> <p>83J-H023 pin 52 to 52J-H034 pin 96 83J-H023 pin 51 to 52J-H034 pin 84</p> <p>Does wiring test good?</p>		
f. Isolate and repair defective aircraft wiring (A1-F18A()-WDM-000) and do step h.....	-	-
g. Isolate and repair defective aircraft wiring (A1-F18A()-WDM-000) from:		
<p>52P-A034 pin 96 to 83P-E001E pin 5 52P-A034 pin 84 to 83P-E001E pin 6</p> <p>and do step h</p>		
h. If disconnected, removed, or opened during this procedure, make sure the items listed below are connected, installed, or closed:		
(1) 52P-A034		
(2) 52P-B042		
(3) Door 6		
(4) Internal door NWA		
(5) Left Digital Display Indicator	-	-

ORGANIZATIONAL MAINTENANCE

FAULT ISOLATION MANUAL

TROUBLESHOOTING PROCEDURE

EFFECTIVITY: F/A-18A AND F/A-18B

This WP supersedes WP116 00, dated 15 December 1987.

Reference Material

Line Maintenance Access Doors.....	A1-F18AC-LMM-010
Line Maintenance Procedures	A1-F18AC-LMM-000
Wiring Repair with Parts Data, General Wiring Repair Procedures	A1-F18AC-WRM-000
Testing and Use of Time Domain Reflectometry Measurements	WP015 00
Mission Computer System	A1-F18AC-741-200
Component Locator	WP006 00

Alphabetical Index

Subject	Page No.
Table 1.....	1
Table 2.....	3

Record of Applicable Technical Directives

None

Table 1. Multiple Terminal Fail Troubleshooting

Support Equipment Required	
Part Number or Type Designation	Nomenclature
1502-04	Time Domain Reflectometer
74D420048-1001	TDR Adapter Kit
Materials Required	
None	

Table 1. Multiple Terminal Fail Troubleshooting (Continued)

NOTE		
<p>Terminal fail codes indicate two malfunctions exist. Malfunctions on both avionic mux bus wires must exist for a terminal fail code to exist. (Example: Avionic mux bus 2X high and 2X low must be open to indicate a terminal fail). Troubleshooting procedures for terminal fails isolate to the malfunction nearest to Digital Data Computer No. 1 on the avionic mux bus. Additional troubleshooting may be required to isolate to the second defective wire/component.</p> <p>Avionic Mux Bus 1X Schematic (WP114 00) may be used as an aid when doing this procedure.</p> <p>For component locator, refer to A1-F18AC-741-200, WP006 00.</p> <p>Malfunction is caused by aircraft wiring.</p>		
Procedure	No	Yes
a. Do substeps below:		
<p>(1) Turn off electrical power (A1-F18AC-LMM-000).</p> <p>(2) Open door 6 (A1-F18AC-LMM-010).</p> <p>(3) Disconnect 52P-A034 from bulkhead (door 6).</p> <p>(4) Remove internal door NWA (A1-F18AC-LMM-010).</p> <p>(5) Disconnect 52P-D038 from bulkhead.</p> <p>(6) Remove left Digital Display Indicator (LDDI) (A1-F18AC-745-300, WP004 00).</p> <p>(7) Using time domain reflectometer (A1-F18AC-WRM-000) and table 2, test wiring from:</p> <p>52J-J038 pin 65 to 80P-H001A pin 40 52J-J038 pin 63 to 80P-H001A pin 41</p> <p>Does wiring test good?.....</p>	b	c
b. Isolate and repair defective aircraft wiring (A1-F18AC()-WDM-000) from:		
<p>52J-J038 pin 65 to 80P-H001A pin S008 52J-J038 pin 63 to 80P-H001A pin S007</p> <p>and do step d.</p>	-	-

Table 1. Multiple Terminal Fail Troubleshooting (Continued)

Procedure	No	Yes
c. Repair defective aircraft wiring (A1-F18AC-WRM-000) from: 52P-D038 pin 65 to WTF001 pin 260 52P-D038 pin 63 to WTF001 pin 262 and do step d.	-	-
d. If disconnected, removed, or opened during this procedure, make sure the items listed below are connected, installed, or closed: (1) 52P-D038 (2) 52P-A034 (3) Internal door NWA (4) Door 6 (5) Left Digital Display Indicator	-	-

Table 2. Avionic Mux Cable Parameters

Cable Number	Connector	Impedance (Ohms)	Dielectric Type	Cable Length (Inches)
U501M	52J-J038 pin 65 to 80P-H001A pin 40	68	PTFE	115 <input type="text" value="1"/> 112 <input type="text" value="2"/>
U502M	52J-J038 pin 63 to 80P-H001A pin 41	68	PTFE	115 <input type="text" value="1"/> 112 <input type="text" value="2"/>
LEGEND				
<input type="text" value="1"/> F/A-18A				
<input type="text" value="2"/> F/A-18B				

ORGANIZATIONAL MAINTENANCE

FAULT ISOLATION MANUAL

TROUBLESHOOTING PROCEDURE

EFFECTIVITY: F/A-18C AND F/A-18D

This WP supersedes WP116 01, dated 15 February 1992.

Reference Material

Line Maintenance Access Doors.....	A1-F18AC-LMM-010
Line Maintenance Procedures	A1-F18AC-LMM-000
Wiring Repair with Parts Data, General Wiring Repair Procedures	A1-F18AE-WRM-000
Testing and Use of Time Domain Reflectometry Measurements.....	WP015 00
Mission Computer System	A1-F18AE-741-200
Component Locator	WP006 00
Fault Isolation Manual.....	A1-F18AC-FIM-000
Troubleshooting Procedure.....	WP114 03

Alphabetical Index

Subject	Page No.
Table 1.....	1

Record of Applicable Technical Directives

None

Table 1. Multiple Avionic Mux Bus Fail Troubleshooting

Support Equipment Required	
Part Number or Type Designation	Nomenclature
1502-04	Time Domain Reflectometer
74D420048-1001	TDR Adapter Kit
Materials Required	
None	

Table 1. Multiple Avionic Mux Bus Fail Troubleshooting (Continued)

NOTE		
<p>Terminal fail codes indicate two malfunctions exist. Malfunctions on both avionic mux bus wires must exist for a terminal fail code to exist. (Example: Avionic mux bus 2X high and 2X low must be open to indicate a terminal fail). Troubleshooting procedures for terminal fails isolate to the malfunction nearest to Digital Data Computer No. 1 on the avionic mux bus. Additional troubleshooting may be required to isolate to the second defective wire/component.</p> <p>Avionic Mux Bus 1X Schematic (WP114 00) may be used as an aid when doing this procedure.</p> <p>For component locator, refer to A1-F18AE-741-200, WP006 00.</p> <p>Memory Inspect data in this procedure is provided in WP114 03.</p> <p>Malfunction is caused by aircraft wiring.</p>		
Procedure	No	Yes
<p>a. Do substeps below:</p> <p>(1) Using unit address 28, memory inspect address for ref code BDMUX1 (table 2, WP114 03).</p> <p>(2) On RDDI, does DATA readout display any of the below:</p> <p style="padding-left: 40px;">X2XXXX X6XXXX?</p>	e	b
<p>b. Do substeps below:</p> <p>(1) Turn off electrical power (A1-F18AC-LMM-000).</p> <p>(2) Open door 6 (A1-F18AC-LMM-010).</p> <p>(3) Disconnect 52P-A034 from bulkhead (door 6).</p> <p>(4) Remove internal door, NWA (A1-F18AC-LMM-010).</p> <p>(5) ON 163472 THRU 164014, disconnect 52P-B042 from bulkhead. ON 164015 THRU 164980, disconnect 52P-D038 from bulkhead. ON 165171 AND UP, WITHOUT DIGITAL DATA COMPUTER CONFIG/IDENT 11C (A1-F18AC-SCM-000), disconnect 83P-H023A from bulkhead. ON 165171 AND UP, WITH DIGITAL DATA COMPUTER CONFIG/IDENT 11C AND UP, (A1-F18AC-SCM-000), disconnect 83P-H023B from bulkhead.</p> <p>(6) ON 163427 THRU 164980, AND 165171 AND UP, WITHOUT DIGITAL DATA COMPUTER CONFIG/IDENT 11C (A1-F18AC-SCM-000), remove left Digital Display Indicator (LDDI) (A1-F18AC-745-300, WP004 00).</p>		

Table 1. Multiple Avionic Mux Bus Fail Troubleshooting (Continued)

Procedure	No	Yes
(7) Using time domain reflectometer and A1-F18AE-WRM-000, test wiring from: ON 163427 THRU 163782, 52J-J042 pin 31 to 80P-H001A pin 41 52J-J042 pin 30 to 80P-H001A pin 40 ON 163985 THRU 164014, 52J-J042 pin 31 to 80P-H001C pin 75 52J-J042 pin 30 to 80P-H001C pin 74 ON 164015 THRU 164980, 52J-J038 pin 63 to 80P-H001C pin 75 52J-J038 pin 65 to 80P-H001C pin 74 ON 165171 AND UP, WITHOUT DIGITAL DATA COMPUTER CONFIG/IDENT 11C (A1-F18AC-SCM-000), 52J-J038 pin 63 to 83J-H023 pin 36 52J-J038 pin 65 to 83J-H023 pin 37 80P-H001C pin 75 to 83J-H023 pin 54 80P-H001C pin 74 to 83P-H023 pin 53 ON 165171 AND UP, WITH DIGITAL DATA COMPUTER CONFIG/IDENT 11C AND UP (A1-F18AC-SCM-000), 52J-J038 pin 63 to 83J-H023 pin 36 52J-J038 pin 65 to 83J-H023 pin 37 Does wiring test good?.....		
c. Isolate and repair defective aircraft wiring (A1-F18A()-WDM-000) and do step h.....	-	-
d. Isolate and repair defective aircraft wiring (A1-F18A()-WDM-000) from: ON 163427 THRU 164014, 52P-B042 pin 30 to WTF001 pin 260 52P-B042 pin 31 to WTF001 pin 262 ON 164015 AND UP, 52P-D038 pin 65 to WTF001 pin 260 52P-D038 pin 63 to WTF001 pin 262 and do step h.		

Table 1. Multiple Avionic Mux Bus Fail Troubleshooting (Continued)

Procedure	No	Yes
<p>e. Do substeps below:</p> <p>(1) Turn off electrical power (A1-F18AC-LMM-000).</p> <p>(2) Open door 6 (A1-F18AC-LMM-010).</p> <p>(3) Disconnect 52P-A034 from bulkhead (door 6).</p> <p>(4) Remove internal door, NWA (A1-F18AC-LMM-010).</p> <p>(5) Disconnect 52P-B042 from bulkhead.</p> <p>(6) Remove left Digital Display Indicator (LDDI) (A1-F18AC-745-300, WP004 00).</p> <p>(7) Using time domain reflectometer and A1-F18AE-WRM-000, test wiring from:</p> <p>ON 163427 THRU 163782,</p> <p>52J-J042 pin 32 to 80P-H001A pin 67 52J-J042 pin 33 to 80P-H001A pin 68</p> <p>ON 163985 THRU 164014,</p> <p>52J-J042 pin 32 to 80P-H001C pin 88 52J-J042 pin 33 to 80P-H001C pin 89</p> <p>ON 164015 THRU 164980,</p> <p>52J-J038 pin 52 to 80P-H001C pin 88 52J-J038 pin 53 to 80P-H001C pin 89</p> <p>ON 165171 AND UP, WITHOUT DIGITAL DATA COMPUTER CONFIG/IDENT 11C (A1-F18AC-SCM-000),</p> <p>83J-H023 pin 41 to 52J-J038 pin 52 83J-H023 pin 40 to 52J-J038 pin 53 83J-H023 pin 49 to 80P-H001C pin 88 83J-H023 pin 50 to 80P-H001C pin 89</p> <p>ON 165171 AND UP, WITH DIGITAL DATA COMPUTER CONFIG/IDENT 11C AND UP (A1-F18AC-SCM-000),</p> <p>52J-J038 pin 52 to 83J-H023 pin 41 52J-J038 pin 53 to 83J-H023 pin 40</p> <p>Does wiring test good?.....</p>		
f. Isolate and repair defective aircraft wiring (A1-F18A()-WDM-000) and do step h.	f	g

Table 1. Multiple Avionic Mux Bus Fail Troubleshooting (Continued)

Procedure	No	Yes
g. Isolate and repair defective aircraft wiring (A1-F18A()-WDM-000) from:		
<p>ON 163427 THRU 164014,</p> <p>52P-B042 pin 32 to WTF001 pin 263 52P-B042 pin 33 to WTF001 pin 265</p> <p>ON 164015 AND UP,</p> <p>52P-B038 pin 52 to WTF001 pin 263 52P-B038 pin 53 to WTF001 pin 265</p>		
and do step h.	-	-
h. If disconnected, removed, or opened during this procedure, make sure the items listed below are connected, installed, or closed:		
(1) 52P-A034		
(2) 52P-B042		
(3) Door 6		
(4) Internal door NWA		
(5) Left Digital Display Indicator	-	-

ORGANIZATIONAL MAINTENANCE

FAULT ISOLATION MANUAL

TROUBLESHOOTING PROCEDURE

EFFECTIVITY: F/A-18A AND F/A-18B

This WP supersedes WP117 00, dated 15 December 1987.

Reference Material

Line Maintenance Access Doors.....	A1-F18AC-LMM-010
Line Maintenance Procedures	A1-F18AC-LMM-000
Wiring Repair with Parts Data, General Wiring Repair Procedures	A1-F18AC-WRM-000
Testing and Use of Time Domain Reflectometry Measurements	WP015 00
Mission Computer System	A1-F18AC-741-200
Component Locator	WP006 00

Alphabetical Index

Subject	Page No.
Table 1.....	1
Table 2.....	3

Record of Applicable Technical Directives

None

Table 1. Multiple Terminal Fail Troubleshooting

Support Equipment Required	
Part Number or Type Designation	Nomenclature
1502-04	Time Domain Reflectometer
74D420048-1001	TDR Adapter Kit
Materials Required	
None	

Table 1. Multiple Terminal Fail Troubleshooting (Continued)

NOTE		
<p>Terminal fail codes indicate two malfunctions exist. Malfunctions on both avionic mux bus wires must exist for a terminal fail code to exist. (Example: Avionic mux bus 2X high and 2X low must be open to indicate a terminal fail). Troubleshooting procedures for terminal fails isolate to the malfunction nearest to Digital Data Computer No. 1 on the avionic mux bus. Additional troubleshooting may be required to isolate to the second defective wire/component.</p> <p>Avionic Mux Bus 1Y Schematic (WP114 00) may be used as an aid when doing this procedure.</p> <p>For component locator, refer to A1-F18AC-741-200, WP006 00.</p> <p>Malfunction is caused by aircraft wiring.</p>		
Procedure	No	Yes
a. Do substeps below:		
<p>(1) Turn off electrical power (A1-F18AC-LMM-000).</p> <p>(2) Open door 6 (A1-F18AC-LMM-010).</p> <p>(3) Disconnect 52P-A034 from bulkhead (door 6).</p> <p>(4) Remove internal door NWA (A1-F18AC-LMM-010).</p> <p>(5) Disconnect 52P-D038 from bulkhead.</p> <p>(6) Remove left Digital Display Indicator (LDDI) (A1-F18AC-745-300, WP004 00).</p> <p>(7) Using time domain reflectometer (A1-F18AC-WRM-000) and table 2, test wiring from:</p> <p>52J-J038 pin 52 to 80P-H001A pin 67 52J-J038 pin 53 to 80P-H001A pin 68</p> <p>Does wiring test good?.....</p>		
b. Isolate and repair defective aircraft wiring (A1-F18A()-WDM-000) from:	b	c
<p>52J-J038 pin 52 to 80P-H001A pin S005 52J-J038 pin 53 to 80P-H001A pin S006</p> <p>and do step d</p>	-	-

Table 1. Multiple Terminal Fail Troubleshooting (Continued)

Procedure	No	Yes
c. Repair defective aircraft wiring (A1-F18AC-WRM-000) from: 52P-D038 pin 52 to WTF006 pin 147 52P-D038 pin 53 to WTF006 pin 148 and do step d.	-	-
d. If disconnected, removed, or opened during this procedure, make sure the items listed below are connected, installed, or closed: (1) 52P-A034 (2) 52P-D038 (3) Door 6 (4) Internal door NWA (5) Left Digital Display Indicator	-	-

Table 2. Avionic Mux Cable Parameters

Cable Number	Connector	Impedance (Ohms)	Dielectric Type	Cable Length (Inches)
U503T	52J-J038 pin 52 to 80P-H001A pin 68	68	PTFE	115 <input type="text" value="1"/> 112 <input type="text" value="2"/>
U504T	52J-J038 pin 53 to 80P-H001A pin 67	68	PTFE	115 <input type="text" value="1"/> 112 <input type="text" value="2"/>
LEGEND				
<input type="text" value="1"/> F/A-18A				
<input type="text" value="2"/> F/A-18B				

ORGANIZATIONAL MAINTENANCE

FAULT ISOLATION MANUAL

TROUBLESHOOTING PROCEDURE

EFFECTIVITY: F/A-18C/D

Reference Material

Fault Isolation Manual.....	A1-F18AC-FIM-000
Troubleshooting Procedure.....	WP114 03

Alphabetical Index

Subject	Page No.
Table 1.....	1

Record of Applicable Technical Directives

None

Table 1. Multiple Avionic Mux Bus Fail Troubleshooting

Support Equipment Required
None
Materials Required
None

Table 1. Multiple Avionic Mux Bus Fail Troubleshooting (Continued)

NOTE		
<p>Terminal fail codes indicate two malfunctions exist. Malfunctions on both avionic mux bus wires must exist for a terminal fail code to exist. (Example: Avionic mux bus 2X high and 2X low must be open to indicate a terminal fail). Troubleshooting procedures for terminal fails isolate to the malfunction nearest to Digital Data Computer No. 1 on the avionic mux bus. Additional troubleshooting may be required to isolate to the second defective wire/component.</p> <p>Avionic Mux Bus 1X Schematic (WP114 00) may be used as an aid when doing this procedure.</p> <p>Malfunction is caused by aircraft wiring.</p>		
Procedure	No	Yes
a. Do substeps below:		
<p>(1) Using unit address 28, memory inspect address for ref code BDMUX1 (table 2, WP114 03)</p> <p>(2) On RDDI, does DATA readout display any of the below:</p> <p style="padding-left: 40px;">X2XXXX X6XXXX?</p>	c	b
b. Isolate and repair defective aircraft wiring (A1-F18A()-WDM-000) from:		
<p style="padding-left: 40px;">WTF001 pin 260 to 84P-F002F pin S002 WTF001 pin 260 to 84P-F002F pin S003</p>	-	-
c. Repair defective aircraft wiring (A1-F18AE-WRM-000) from:		
<p style="padding-left: 40px;">WTF005 pin 36 to WTF006 pin 147 WTF005 pin 37 to WTF006 pin 148</p>	-	-

ORGANIZATIONAL MAINTENANCE

FAULT ISOLATION MANUAL

TROUBLESHOOTING PROCEDURE

EFFECTIVITY: F/A-18A AND F/A-18B

This WP supersedes WP118 00, dated 15 February 1992.

Reference Material

Line Maintenance Access Doors.....	A1-F18AC-LMM-010
Line Maintenance Procedures	A1-F18AC-LMM-000
Wiring Repair with Parts Data, General Wiring Repair Procedures	A1-F18AC-WRM-000
Testing and Use of Time Domain Reflectometry Measurements	WP015 00
Mission Computer System	A1-F18AC-741-200
Component Locator	WP006 00

Alphabetical Index

Subject	Page No.
Table 1.....	1
Table 2.....	3

Record of Applicable Technical Directives

None

Table 1. Multiple Terminal Fail Troubleshooting

Support Equipment Required	
Part Number or Type Designation	Nomenclature
1502-04	Time Domain Reflectometer
74D420048-1001	TDR Adapter Kit
Materials Required	
None	

Table 1. Multiple Terminal Fail Troubleshooting (Continued)

<p style="text-align: center;">NOTE</p> <p>Terminal fail codes indicate two malfunctions exist. Malfunctions on both avionic mux bus wires must exist for a terminal fail code to exist. (Example: Avionic mux bus 2X high and 2X low must be open to indicate a terminal fail). Troubleshooting procedures for terminal fails isolate to the malfunction nearest to Digital Data Computer No. 1 on the avionic mux bus. Additional troubleshooting may be required to isolate to the second defective wire/component.</p> <p>Avionic Mux Bus 2X Schematic (WP114 00) may be used as an aid when doing this procedure.</p> <p>For component locator, refer to A1-F18AC-741-200, WP006 00 or A1-F18AE-741-200, WP006 00.</p> <p>Malfunction is caused by one of the items below:</p> <p>Aircraft Wiring Cable Assembly</p>		
Procedure	No	Yes
a. Do substeps below:		
<p>(1) Open door 3 (A1-F18AC-LMM-010).</p> <p>(2) Disconnect radar disconnect 05P02 from bulkhead.</p> <p>(3) Open radome (A1-F18AC-LMM-000).</p> <p>(4) Disconnect 07P06 from Computer-Power Supply CP-1325/APG-65.</p> <p>(5) Using time domain reflectometer (A1-F18A()-WRM-000) and table 2, test wiring from:</p> <p style="padding-left: 40px;">05P02 pin 46 to 07P06 pin 52 05P02 pin 56 to 07P06 pin 53</p> <p>Does wiring test good?.....</p>	b	c
b. Repair defective aircraft wiring (A1-F18A()-WRM-000) from:		
<p style="padding-left: 40px;">05P02 pin 46 to 07P06 pin S001 05P02 pin 56 to 07P06 pin S002</p> <p>or replace cable assembly (A1-F18AC-742-300, WP018 00) and do step d.</p>	-	-
c. Isolate and repair defective aircraft wiring (A1-F18A()-WDM-000) from:		
<p style="padding-left: 40px;">60J-A001B pin 46 to WTE001 pin 139 60J-A001B pin 56 to WTE001 pin 140</p> <p>and do step d.</p>	-	-

Table 1. Multiple Terminal Fail Troubleshooting (Continued)

Procedure	No	Yes
d. If disconnected, removed, or opened during this procedure, make sure the items listed below are connected, installed, or closed:		
(1) 07P06		
(2) 05P02		
(3) Door 3		
(4) Radome	-	-

Table 2. Avionic Mux Cable Parameters

Cable Number	Connector	Impedence (Ohms)	Dielectric Type	Maximum Millrho	Cable Length (Inches)
—	05P02 pin 46 to 07P06 pin 52	68	PTFE	±600	93
—	05P02 pin 56 to 07P06 pin 53	68	PTFE	±600	93

ORGANIZATIONAL MAINTENANCE

FAULT ISOLATION MANUAL

TROUBLESHOOTING PROCEDURE

EFFECTIVITY: F/A-18C/D

Reference Material

Fault Isolation Manual.....	A1-F18AC-FIM-000
Troubleshooting Procedure.....	WP114 03

Alphabetical Index

Subject	Page No.
Table 1.....	1

Record of Applicable Technical Directives

None

Table 1. Multiple Avionic Mux Bus Fail Troubleshooting

Support Equipment Required
None
Materials Required
None

Table 1. Multiple Avionic Mux Bus Fail Troubleshooting (Continued)

NOTE		
<p>Terminal fail codes indicate two malfunctions exist. Malfunctions on both avionic mux bus wires must exist for a terminal fail code to exist. (Example: Avionic mux bus 2X high and 2X low must be open to indicate a terminal fail). Troubleshooting procedures for terminal fails isolate to the malfunction nearest to Digital Data Computer No. 1 on the avionic mux bus. Additional troubleshooting may be required to isolate to the second defective wire/component.</p> <p>Avionic Mux Bus 1X Schematic (WP114 00) may be used as an aid when doing this procedure.</p> <p>Memory Inspect data in this procedure is provided in WP114 03.</p> <p>Malfunction is caused by aircraft wiring.</p>		
Procedure	No	Yes
a. Do substeps below:		
<p>(1) Using unit address 28, memory inspect address for ref code BDMUX1 (table 2, WP114 03).</p> <p>(2) On RDDI, does DATA readout display any of the below:</p> <p style="padding-left: 40px;">X2XXXX</p> <p style="padding-left: 40px;">X6XXXX?</p>	c	b
b. Repair defective aircraft wiring (A1-F18AE-WRM-000) from:		
<p style="padding-left: 40px;">84P-F002F pin S002 to WTF002 pin 109</p> <p style="padding-left: 40px;">84P-F002F pin S003 to WTF002 pin 110</p>	-	-
c. Repair defective aircraft wiring (A1-F18AE-WRM-000) from:		
<p style="padding-left: 40px;">WTF006 pin 147 to WTF005 pin 4</p> <p style="padding-left: 40px;">WTF006 pin 148 to WTF005 pin 6</p>	-	-

ORGANIZATIONAL MAINTENANCE

FAULT ISOLATION MANUAL

TROUBLESHOOTING PROCEDURE

This WP supersedes WP119 00, dated 15 December 1987.

Reference Material

Line Maintenance Access Doors.....	A1-F18AC-LMM-010
Line Maintenance Procedures	A1-F18AC-LMM-000
Mission Computer System	A1-F18AC-741-200
Component Locator.....	WP006 00
Mission Computer System	A1-F18AE-741-200
Component Locator.....	WP006 00
Fault Isolation Manual.....	A1-F18AC-FIM-000
Troubleshooting Procedure.....	WP114 03

Alphabetical Index

Subject	Page No.
Table 1.....	1
Table 2.....	4

Record of Applicable Technical Directives

None

Table 1. Multiple Terminal Fail Troubleshooting

Support Equipment Required	
Part Number or Type Designation	Nomenclature
1502-04	Time Domain Reflectometer
74D420048-1001	TDR Adapter Kit
Materials Required	
None	

Table 1. Multiple Terminal Fail Troubleshooting (Continued)

NOTE		
<p>Terminal fail codes indicate two malfunctions exist. Malfunctions on both avionic mux bus wires must exist for a terminal fail code to exist. (Example: Avionic mux bus 2X high and 2X low must be open to indicate a terminal fail). Troubleshooting procedures for terminal fails isolate to the malfunction nearest to Digital Data Computer No. 1 on the avionic mux bus. Additional troubleshooting may be required to isolate to the second defective wire/component.</p> <p>Avionic Mux Bus 2Y Schematic (WP114 00) may be used as an aid when doing this procedure.</p> <p>For component locator, refer to A1-F18AC-741-200, WP006 00 or A1-F18AE-741-200, WP006 00.</p> <p>Memory Inspect data in this procedure is provided in WP114 03.</p> <p>Malfunction is caused by aircraft wiring.</p>		
Procedure	No	Yes
a. Do substeps below:		
<p>(1) Using unit address 28, memory inspect address for ref code BDMUX1 (table 2, WP114 03).</p> <p>(2) On RDDI, does DATA readout display any of the below:</p> <p style="margin-left: 40px;">X2XXXX</p> <p style="margin-left: 40px;">X6XXXX?</p>	c	b
b. Isolate and repair defective aircraft wiring (A1-F18A()-WDM-000) from:		
<p>ON 161353 THRU 161528,</p> <p style="margin-left: 40px;">83P-E001D pin 23 to WTE001 pin 139</p> <p style="margin-left: 40px;">83P-E001D pin 24 to WTE001 pin 140</p> <p>ON 161702 AND UP,</p> <p style="margin-left: 40px;">WTE001 pin 139 to 62P-E006B pin S006</p> <p style="margin-left: 40px;">WTE001 pin 140 to 62P-E006B pin S007</p> <p>and do step h.</p>	-	-
c. Is aircraft 161702 AND UP?	d	g
d. Do substeps below:		
<p>(1) Turn off electrical power (A1-F18AC-LMM-000).</p>		

Table 1. Multiple Terminal Fail Troubleshooting (Continued)

Procedure	No	Yes
<p>(2) Open door 10R (A1-F18AC-LMM-010).</p> <p>(3) Disconnect 52P-D029 from bulkhead.</p> <p>(4) Open door 13L (A1-F18AC-LMM-010).</p> <p>(5) Disconnect 83P-E001E from Digital Data Computer No. 1.</p> <p>(6) Disconnect 83P-E005 from left mux bus impedance matching network.</p> <p>(7) Using time domain reflectometer (A1-F18AC-WRM-000) and table 2, test wiring from:</p> <p style="padding-left: 40px;">83P-E001E pin 23 to 52P-D029 pin 91</p> <p style="padding-left: 40px;">83P-E001E pin 24 to 52P-D029 pin 102</p> <p>Does wiring test good?.....</p>	e	f
<p>e. Isolate and repair defective aircraft wiring (A1-F18A()-WDM-000) from:</p> <p style="padding-left: 40px;">52P-D029 pin 91 to 83P-E001E pin 23</p> <p style="padding-left: 40px;">52P-D029 pin 102 to 83P-E001E pin 24</p> <p>and do step h.</p>	-	-
<p>f. Repair defective aircraft wiring (A1-F18AC-WRM-000) from:</p> <p style="padding-left: 40px;">52J-J029 pin 91 to 52J-J029 pin S009</p> <p style="padding-left: 40px;">52J-J029 pin 102 to 52J-J029 pin S010</p> <p>and do step h.</p>	-	-
<p>g. Isolate and repair defective aircraft wiring (A1-F18A()-WDM-000) from:</p> <p style="padding-left: 40px;">83P-E001E pin 23 to WTF001 pin 266</p> <p style="padding-left: 40px;">83P-E001E pin 24 to WTF001 pin 268</p> <p>and do step h.</p>	-	-
<p>h. If disconnected, removed, or opened during this procedure, make sure the items listed below are connected, installed, or closed:</p> <p>(1) 52P-D029</p> <p>(2) 83P-E001E</p> <p>(3) 83P-E005</p> <p>(4) Door 10R</p>		

Table 1. Multiple Terminal Fail Troubleshooting (Continued)

Procedure	No	Yes
(5) Door 13L.....	-	-

Table 2. Avionic Mux Cable Parameters

Cable Number	Connector	Impedance (Ohms)	Dielectric Type	Cable Length (Inches)
U507A	83P-E001E pin 23 to 52P-J029 pin 91	68	PTFE	213 <input type="text" value="1"/> 221 <input type="text" value="2"/> 217 <input type="text" value="3"/>
U508A	83P-E001E pin 24 to 52P-J029 pin 102	68	PTFE	216 <input type="text" value="4"/> 213 <input type="text" value="1"/> 221 <input type="text" value="2"/> 217 <input type="text" value="3"/> 216 <input type="text" value="4"/>
LEGEND <input type="text" value="1"/> ➤ F/A-18A <input type="text" value="2"/> ➤ F/A-18B <input type="text" value="3"/> ➤ F/A-18C <input type="text" value="4"/> ➤ F/A-18D				

ORGANIZATIONAL MAINTENANCE

FAULT ISOLATION MANUAL

TROUBLESHOOTING PROCEDURE

This WP supersedes WP120 00, dated 15 February 1992.

Reference Material

Line Maintenance Access Doors.....	A1-F18AC-LMM-010
Line Maintenance Procedures	A1-F18AC-LMM-000
Wiring Repair with Parts Data, General Wiring Repair Procedures	A1-F18AC-WRM-000
Testing and Use of Time Domain Reflectometry Measurements.....	WP015 00
Wiring Repair with Parts Data, General Wiring Repair Procedures	A1-F18AE-WRM-000
Testing and Use of Time Domain Reflectometry Measurements.....	WP015 00
Mission Computer System	A1-F18AC-741-200
Component Locator.....	WP006 00
Mission Computer System	A1-F18AE-741-200
Component Locator.....	WP006 00

Alphabetical Index

Subject	Page No.
Table 1.....	1
Table 2.....	5

Record of Applicable Technical Directives

None

Table 1. Multiple Terminal Fail Troubleshooting

Support Equipment Required	
Part Number or Type Designation	Nomenclature
1502-04	Time Domain Reflectometer
74D420048-1001	TDR Adapter Kit
Materials Required	
None	

Table 1. Multiple Terminal Fail Troubleshooting (Continued)

<p style="text-align: center;">NOTE</p> <p>Terminal fail codes indicate two malfunctions exist. Malfunctions on both avionic mux bus wires must exist for a terminal fail code to exist. (Example: Avionic mux bus 2X high and 2X low must be open to indicate a terminal fail). Troubleshooting procedures for terminal fails isolate to the malfunction nearest to Digital Data Computer No. 1 on the avionic mux bus. Additional troubleshooting may be required to isolate to the second defective wire/component.</p> <p>Avionic Mux Bus 2X Schematic (WP114 00) may be used as an aid when doing this procedure.</p> <p>For component locator, refer to A1-F18AC-741-200, WP006 00 or A1-F18AE-741-200, WP006 00.</p> <p>Malfunction is caused by one of the items below:</p> <p>Aircraft Wiring Cable Assembly</p>		
Procedure	No	Yes
<p>a. Do substeps below:</p> <p>(1) Open door 3 (A1-F18AC-LMM-010).</p> <p>(2) Disconnect radar disconnect 05P02 from bulkhead.</p> <p>(3) Open radome (A1-F18AC-LMM-000).</p> <p>(4) ON 163427 THRU 164897, disconnect 07P06 from Computer-Power Supply CP-1325/APG-65.</p> <p>(5) ON 164898 AND UP, disconnect 04P05 from Radar Data Processor CP-2062/APG-73.</p> <p>(6) Using time domain reflectometer (A1-F18A()-WRM-000) and table 2, test wiring from:</p> <p>ON 163427 THRU 164897,</p> <p>05P02 pin 88 to 07P06 pin 52 05P02 pin 89 to 07P06 pin 53</p> <p>ON 164898 AND UP,</p> <p>05P02 pin 88 to 04P05 pin 16 05P02 pin 89 to 04P05 pin 37</p> <p>Does wiring test good?.....</p>	<p>b</p>	<p>c</p>

Table 1. Multiple Terminal Fail Troubleshooting (Continued)

Procedure	No	Yes
b. Repair defective aircraft wiring (A1-F18A()-WRM-000) from: ON 163427 THRU 164897, 05P02 pin 88 to 07P06 pin 52 05P02 pin 89 to 07P06 pin 53 ON 164898 AND UP, 05P02 pin 88 to 04P05 pin 16 05P02 pin 89 to 04P05 pin 37 or replace cable assembly (A1-F18A()-742-300, WP013 00) and do step f.	-	-
c. Do substeps below: (1) ON F/A-18D 164279 AND UP, disconnect 83P-B019 from avionic mux coupling transformer. (2) Open door 6 (A1-F18AC-LMM-010). (3) Disconnect 52P-A046 from bulkhead (door 6). (4) Using time domain reflectometer (A1-F18A()-WRM-000) and table 2, test wiring from: 60J-A001B pin 89 to 52P-A046 pin 63 60J-A001B pin 88 to 52P-A046 pin 65 Does wiring test good?.....	d	e
d. Isolate and repair defective aircraft wiring (A1-F18A()-WDM-000) from: 60J-A001B pin 88 to 52P-A046 pin 65 60J-A001B pin 89 to 52P-A046 pin 63 and do step f.	-	-

Table 1. Multiple Terminal Fail Troubleshooting (Continued)

Procedure	No	Yes
<p>e. Isolate and repair defective aircraft wiring (A1-F18A()-WDM-000) from:</p> <p>ON F/A-18A AND F/A-18B,</p> <p>52J-H046 pin 63 to 80P-J002A pin S005 52J-H046 pin 65 to 80P-J002A pin S006</p> <p>ON F/A-18C 163427 THRU 163782,</p> <p>52J-H046 pin 63 to 77P-L001E pin S003 52J-H046 pin 65 to 77P-L001E pin S002</p> <p>ON F/A-18C 163985 AND UP,</p> <p>52J-H046 pin 63 to 80P-L025D pin S004 52J-H046 pin 65 to 80P-L025D pin S003</p> <p>ON F/A-18D,</p> <p>52J-H046 pin 63 to WTK001 pin 63 52J-H046 pin 65 to WTK001 pin 62</p> <p>and do step f.</p> <p>f. If disconnected, removed, or opened during this procedure, make sure the items listed below are connected, installed, or closed:</p> <p>(1) Door 3</p> <p>(2) 05P02</p> <p>(3) 07P06</p> <p>(4) 04P05</p> <p>(5) Door 6</p> <p>(6) 52P-A046</p> <p>(7) 83P-B019</p> <p>(8) Radome</p>	-	-

Table 2. Avionic Mux Cable Parameters

Cable Number	Connector	Impedence (Ohms)	Dielectric Type	Maximum Millrho	Cable Length (Inches)
—	5 05P02 pin 88 to 07P06 pin 52	68	PTFE	±600	93
—	5 05P02 pin 89 to 07P06 pin 53	68	PTFE	±600	93
—	6 05P02 pin 89 to 04P05 pin 16	68	PTFE	±600	93
—	6 05P02 pin 89 to 04P05 pin 37	68	PTFE	±600	93
U505H	60J-A001B pin 88 to 52P-A046 pin 65	68	PTFE	±600	149 1 145 2 151 3 378 4
U506H	60J-A001B pin 89 to 52P-A046 pin 63	68	PTFE	±600	149 1 145 2 151 3 378 4

LEGEND

- 1 F/A-18A AND F/A-18C
 2 F/A-18B
 3 F/A-18D 163434 THRU 164272
 4 F/A-18D 164279 AND UP
 5 163427 THRU 164897
 6 164898 AND UP

ORGANIZATIONAL MAINTENANCE

FAULT ISOLATION MANUAL

TROUBLESHOOTING PROCEDURE

This WP supersedes WP121 00, dated 15 February 1992.

Reference Material

Line Maintenance Procedures	A1-F18AC-LMM-000
Line Maintenance Access Doors.....	A1-F18AC-LMM-010
Wiring Repair with Parts Data, General Wiring Repair Procedures	A1-F18AC-WRM-000
Testing and Use of Time Domain Reflectometry Measurements	WP015 00
Wiring Repair with Parts Data, General Wiring Repair Procedures	A1-F18AE-WRM-000
Testing and Use of Time Domain Reflectometry Measurements	WP015 00
Mission Computer System	A1-F18AC-741-200
Component Locator	WP006 00
Mission Computer System	A1-F18AE-741-200
Component Locator	WP006 00

Alphabetical Index

Subject	Page No.
Table 1	1
Table 2	4

Record of Applicable Technical Directives

None

Table 1. Multiple Terminal Fail Troubleshooting

Support Equipment Required	
Part Number or Type Designation	Nomenclature
1502-04	Time Domain Reflectometer
74D420048-1001	TDR Adapter Kit
Materials Required	
None	

Table 1. Multiple Terminal Fail Troubleshooting (Continued)

<p style="text-align: center;">NOTE</p> <p>Terminal fail codes indicate two malfunctions exist. Malfunctions on both avionic mux bus wires must exist for a terminal fail code to exist. (Example: Avionic mux bus 2X high and 2X low must be open to indicate a terminal fail). Troubleshooting procedures for terminal fails isolate to the malfunction nearest to Digital Data Computer No. 1 on the avionic mux bus. Additional troubleshooting may be required to isolate to the second defective wire/component.</p> <p>Avionic Mux Bus 2Y Schematic (WP114 00) may be used as an aid when doing this procedure.</p> <p>For component locator, refer to A1-F18AC-741-200, WP006 00 or A1-F18AE-741-200, WP006 00.</p> <p>Malfunction is caused by one of the items below:</p> <p>Aircraft Wiring Cable Assembly</p>		
Procedure	No	Yes
<p>a. Do substeps below:</p> <p>(1) Open door 3 (A1-F18AC-LMM-010).</p> <p>(2) Disconnect radar disconnect 05P02 from bulkhead.</p> <p>(3) Open radome (A1-F18AC-LMM-000).</p> <p>(4) ON 163427 THRU 164897, disconnect 07P06 from Computer-Power Supply CP-1325/APG-65.</p> <p>(5) ON 164898 AND UP, disconnect 04P05 from Radar Data Processor CP-2062/APG-73.</p> <p>(6) Using time domain reflectometer (A1-F18A()-WRM-000) and table 2, test wiring from:</p> <p>ON 163427 THRU 164897,</p> <p>05P02 pin 91 to 07P06 pin 68 05P02 pin 92 to 07P06 pin 69</p> <p>ON 164898 AND UP,</p> <p>05P02 pin 91 to 04P05 pin 3 05P02 pin 92 to 04P05 pin 2</p> <p>Does wiring test good?.....</p>	<p>b</p>	<p>c</p>

Table 1. Multiple Terminal Fail Troubleshooting (Continued)

Procedure	No	Yes
b. Repair defective aircraft wiring (A1-F18A()-WRM-000) from:		
ON 163427 THRU 164897,		
05P02 pin 91 to 07P06 pin S003		
05P02 pin 92 to 07P06 pin S004		
ON 164898 AND UP,		
05P02 pin 91 to 04P05 pin TS3		
05P02 pin 92 to 04P05 pin TS4		
or replace cable assembly (A1-F18A()-742-300, WP013 00) and do step d.....	-	-
c. Isolate and repair defective aircraft wiring (A1-F18A()-WDM-000) from:		
60J-A001B pin 91 to WTE001 142		
60J-A001B pin 92 to WTE001 143		
and do step d.	-	-
d. If disconnected, removed, or opened during this procedure, make sure the items listed below are connected, installed, or closed:		
(1) Door 3		
(2) 05P02		
(3) 07P06		
(4) 04P05		
(5) Radome	-	-

Table 2. Avionic Mux Cable Parameters

Cable Number	Connector	Impedence (Ohms)	Dielectric Type	Maximum Millrho	Cable Length (Inches)
—	1 05P02 pin 91 to 07P06 pin 68	68	PTFE	±600	93
—	1 05P02 pin 92 to 07P06 pin 69	68	PTFE	±600	93
—	2 05P02 pin 91 to 04P05 pin 3	68	PTFE	±600	93
—	2 05P02 pin 92 to 04P05 pin 2	68	PTFE	±600	93
LEGEND					
1 163427 THRU 164897					
2 164898 AND UP					

ORGANIZATIONAL MAINTENANCE

FAULT ISOLATION MANUAL

TROUBLESHOOTING PROCEDURE

This WP supersedes WP122 00, dated 15 February 1992.

Reference Material

Line Maintenance Access Doors.....	A1-F18AC-LMM-010
Wiring Repair with Parts Data, General Wiring Repair Procedures	A1-F18AC-WRM-000
Testing and Use of Time Domain Reflectometry Measurements.....	WP015 00
Wiring Repair with Parts Data, General Wiring Repair Procedures	A1-F18AE-WRM-000
Testing and Use of Time Domain Reflectometry Measurements.....	WP015 00
Mission Computer System	A1-F18AC-741-200
Component Locator.....	WP006 00
Mission Computer System	A1-F18AE-741-200
Component Locator.....	WP006 00

Alphabetical Index

Subject	Page No.
Table 1.....	1
Table 2.....	5

Record of Applicable Technical Directives

None

Table 1. Multiple Terminal Fail Troubleshooting

Support Equipment Required	
Part Number or Type Designation	Nomenclature
1502-04	Time Domain Reflectometer
74D420048-1001	TDR Adapter Kit
Materials Required	
None	

Table 1. Multiple Terminal Fail Troubleshooting (Continued)

<p style="text-align: center;">NOTE</p> <p>Terminal fail codes indicate two malfunctions exist. Malfunctions on both avionic mux bus wires must exist for a terminal fail code to exist. (Example: Avionic mux bus 2X high and 2X low must be open to indicate a terminal fail). Troubleshooting procedures for terminal fails isolate to the malfunction nearest to Digital Data Computer No. 1 on the avionic mux bus. Additional troubleshooting may be required to isolate to the second defective wire/component.</p> <p>Avionic Mux Bus 2Y Schematic (WP114 00) may be used as an aid when doing this procedure.</p> <p>For component locator, refer to A1-F18AC-741-200, WP006 00 or A1-F18AE-741-200, WP006 00.</p> <p>Malfunction is caused by one of the items below:</p> <p>Aircraft Wiring Cable Assembly</p>		
Procedure	No	Yes
<p>a. Do substeps below:</p> <p>(1) Open door 3 (A1-F18AC-LMM-010).</p> <p>(2) Disconnect radar disconnect 05P02 from bulkhead.</p> <p>(3) ON 163427 THRU 164897, disconnect 07P06 from Computer-Power Supply CP-1325/APG-65.</p> <p>(4) ON 164898 AND UP, disconnect 04P05 from Radar Data Processor CP-2062/APG-73.</p> <p>(5) Using time domain reflectometer (A1-F18A()-WRM-000) and table 2, test wiring from:</p> <p>ON 163427 THRU 164897 05P02 pin 47 to 07P06 pin 68 05P02 pin 57 to 07P06 pin 69</p> <p>ON 164898 AND UP 05P02 pin 47 to 04P05 pin 3 05P02 pin 57 to 04P05 pin 2</p> <p>Does wiring test good?.....</p>	b	c

Table 1. Multiple Terminal Fail Troubleshooting (Continued)

Procedure	No	Yes
<p>b. Repair defective aircraft wiring (A1-F18A()-WRM-000) from:</p> <p>ON 163427 THRU 164897,</p> <p>05P02 pin 47 to 07P06 pin S003 05P02 pin 57 to 07P06 pin S004</p> <p>ON 164898 AND UP,</p> <p>05P02 pin 47 to 04P05 pin TS3 05P02 pin 57 to 04P05 pin TS4</p> <p>or replace cable assembly (A1-F18A()-742-300, WP013 00) and do step f.</p>	-	-
<p>c. Do substeps below:</p> <p>(1) ON F/A-18D 164279 AND UP, disconnect 83P-B020 from avionic mux coupling transformer.</p> <p>(2) Open door 6 (A1-F18AC-LMM-010).</p> <p>(3) Disconnect 52P-A046 from bulkhead (door 6).</p> <p>(4) Using time domain reflectometer (A1-F18A()-WRM-000) and table 2, test wiring from:</p> <p>60J-A001B pin 47 to 52P-A046 pin 52 60J-A001B pin 57 to 52P-A046 pin 53</p> <p>Does wiring test good?.....</p>	d	e
<p>d. Isolate and repair defective aircraft wiring (A1-F18A()-WDM-000) from:</p> <p>60J-A001B pin 47 to 52P-A046 pin 52 60J-A001B pin 57 to 52P-A046 pin 53</p> <p>and do step f.</p>	-	-

Table 1. Multiple Terminal Fail Troubleshooting (Continued)

Procedure	No	Yes
<p>e. Repair defective aircraft wiring (A1-F18A()-WRM-000) from:</p> <p>ON F/A-18A AND F/A-18B,</p> <p>52J-H046 pin 52 to 80P-J002A pin S004 52J-H046 pin 53 to 80P-J002A pin S003</p> <p>ON F/A-18C 163427 THRU 163782,</p> <p>52J-H046 pin 52 to 77P-L001G pin S002 52J-H046 pin 53 to 77P-L001G pin S003</p> <p>ON F/A-18C 163985 AND UP,</p> <p>52J-H046 pin 52 to 80P-L025D pin S005 52J-H046 pin 53 to 80P-L025D pin S006</p> <p>ON F/A-18D,</p> <p>52J-H046 pin 52 to WTK001 pin 65 52J-H046 pin 53 to WTK001 pin 66</p> <p>and do step f.</p> <p>f. If disconnected, removed, or opened during this procedure, make sure the items listed below are connected, installed, or closed:</p> <p>(1) Door 3</p> <p>(2) 05P02</p> <p>(3) 07P06</p> <p>(4) 04P05</p> <p>(5) Door 6</p> <p>(6) 83P-B020</p> <p>(7) 52P-A046</p>	-	-

Table 2. Avionic Mux Cable Parameters

Cable Number	Connector	Impedence (Ohms)	Dielectric Type	Maximum Millrho	Cable Length (Inches)
—	5 05P02 pin 47 to 07P06 pin 68	68	PTFE	±600	93
—	5 05P02 pin 57 to 07P06 pin 69	68	PTFE	±600	93
—	6 05P02 pin 47 to 04P05 pin 3	68	PTFE	±600	93
—	6 05P02 pin 57 to 04P05 pin 2	68	PTFE	±600	93
U507Y	60J-A001B pin 47 to 52P-A046 pin 52	68	PTFE	±600	149 1 145 2 151 3 384 4
U508Y	60J-A001B pin 57 to 52P-A046 pin 53	68	PTFE	±600	149 1 145 2 151 3 384 4

LEGEND

- 1 F/A-18A AND F/A-18C
 2 F/A-18B
 3 F/A-18D 163434 THRU 164272
 4 F/A-18D 164279 AND UP
 5 163427 THRU 164897
 6 164898 AND UP

ORGANIZATIONAL MAINTENANCE

FAULT ISOLATION MANUAL

TROUBLESHOOTING PROCEDURE

This WP supersedes WP123 00, dated 15 December 1987.

Reference Material

Line Maintenance Procedures	A1-F18AC-LMM-000
Wiring Repair with Parts Data, Cable Assembly	A1-F18AC-WRM-000
Wiring Repair with Parts Data, Cable Assembly	A1-F18AE-WRM-000
Mission Computer System	A1-F18AC-741-200
Component Locator.....	WP006 00
Mission Computer System	A1-F18AE-741-200
Component Locator.....	WP006 00
Fault Isolation Manual.....	A1-F18AC-FIM-000
Troubleshooting Procedure.....	WP114 03

Alphabetical Index

Subject	Page No.
Table 1.....	1

Record of Applicable Technical Directives

None

Table 1. Multiple Terminal Fail Troubleshooting

Support Equipment Required
None

Table 1. Multiple Terminal Fail Troubleshooting (Continued)

<p style="text-align: center;">Materials Required</p> <p style="text-align: center;">None</p> <p style="text-align: center;">NOTE</p> <p>Terminal fail codes indicate two malfunctions exist. Malfunctions on both avionic mux bus wires must exist for a terminal fail code to exist. (Example: Avionic mux bus 2X high and 2X low must be open to indicate a terminal fail). Troubleshooting procedures for terminal fails isolate to the malfunction nearest to Digital Data Computer No. 1 on the avionic mux bus. Additional troubleshooting may be required to isolate to the second defective wire/component.</p> <p>Avionic Mux Bus 2X Schematic and Avionic Mux Bus 2Y Schematic (WP114 00) may be used as an aid when doing this procedure.</p> <p>For component locator, refer to A1-F18AC-741-200, WP006 00 or A1-F18AE-741-200, WP006 00.</p> <p>Memory Inspect data in this procedure is provided in WP114 03.</p> <p>Malfunction is caused by aircraft wiring.</p>		
Procedure	No	Yes
a. Do substeps below:		
(1) Using unit address 28, memory inspect address for ref code BDMUX1 (table 2, WP114 03).		
(2) On RDDI, does DATA readout display any of the below:		
X2XXXX X6XXXX?	c	b
b. Repair defective aircraft wiring (A1-F18AC-WRM-000) from:		
61J-P110B pin S001 to 61J-R111A pin S002		
61J-P110B pin S002 to 61J-R111A pin S001	-	-
c. Repair defective aircraft wiring (A1-F18AC-WRM-000) from:		
61J-P110B pin S003 to 61J-R111A pin S003		
61J-P110B pin S004 to 61J-R111A pin S004	-	-

ORGANIZATIONAL MAINTENANCE

FAULT ISOLATION MANUAL

TROUBLESHOOTING PROCEDURE

This WP supersedes WP124 00, dated 1 August 1989.

Reference Material

Line Maintenance Access Doors.....	A1-F18AC-LMM-010
Line Maintenance Procedures	A1-F18AC-LMM-000
Wiring Repair with Parts Data, General Wiring Repair Procedures	A1-F18AC-WRM-000
Testing and Use of Time Domain Reflectometry Measurements	WP015 00
Wiring Repair with Parts Data, General Wiring Repair Procedures	A1-F18AE-WRM-000
Testing and Use of Time Domain Reflectometry Measurements	WP015 00
Mission Computer System	A1-F18AC-741-200
Component Locator	WP006 00
Mission Computer System	A1-F18AE-741-200
Component Locator	WP114 03
Fault Isolation Manual	A1-F18AC-FIM-000
Troubleshooting Procedure	WP114 03

Alphabetical Index

Subject	Page No.
Table 1	1
Table 2	6

Record of Applicable Technical Directives

None

Table 1. Multiple Terminal Fail Troubleshooting

Support Equipment Required	
Part Number or Type Designation	Nomenclature
1502-04	Time Domain Reflectometer
74D420048-1001	TDR Adapter Kit
Materials Required	
None	

Table 1. Multiple Terminal Fail Troubleshooting (Continued)

<p style="text-align: center;">NOTE</p> <p>Terminal fail codes indicate two malfunctions exist. Malfunctions on both avionic mux bus wires must exist for a terminal fail code to exist. (Example: Avionic mux bus 2X high and 2X low must be open to indicate a terminal fail). Troubleshooting procedures for terminal fails isolate to the malfunction nearest to Digital Data Computer No. 1 on the avionic mux bus. Additional troubleshooting may be required to isolate to the second defective wire/component.</p> <p>Avionic Mux Bus 2X Schematic and Avionic Mux Bus 2Y Schematic (WP114 00) may be used as an aid when doing this procedure.</p> <p>For component locator, refer to A1-F18AC-741-200, WP006 00 or A1-F18AE-741-200, WP006 00.</p> <p>Memory Inspect data in this procedure is provided in WP114 03.</p> <p>Malfunction is caused by aircraft wiring.</p>		
Procedure	No	Yes
<p>a. Do substeps below:</p> <p>(1) Using unit address 28, memory inspect address for ref code BDMUX1 (table 2, WP114 03).</p> <p>(2) On RDDI, does DATA readout display any of the below:</p> <p style="margin-left: 40px;">X2XXXX X6XXXX?</p>	b	e
<p>b. Do substeps below:</p> <p>(1) Open door 35L (A1-F18AC-LMM-010).</p> <p>(2) Disconnect 52P-E007 from bulkhead.</p> <p>(3) Open door 3 (A1-F18AC-LMM-010).</p> <p>(4) Disconnect radar disconnect 05P02 from bulkhead.</p> <p>(5) Open door 13L (A1-F18AC-LMM-010).</p> <p>(6) Disconnect 68P-E001A from Inertial Navigation Unit.</p>		

Table 1. Multiple Terminal Fail Troubleshooting (Continued)

Procedure	No	Yes
(7) Using time domain reflectometer (A1-F18A()-WRM-000) and table 2, test wiring from: 52J-E007 pin 110 to 60J-A001B pin 92 52J-E007 pin 111 to 60J-A001B pin 91 Does wiring test good?.....	d	c
c. Repair defective aircraft wiring (A1-F18A()-WRM-000) from: 52P-E007 pin 110 to 61J-P110B pin S004 52P-E007 pin 111 to 61J-P110B pin S003 and do step k.....	-	-
d. Repair defective aircraft wiring (A1-F18A()-WRM-000) from: 52J-E007 pin 110 to WTE001 pin 143 52J-E007 pin 111 to WTE001 pin 142 and do step k.....	-	-
e. Do substeps below: (1) Open door 10R (A1-F18AC-LMM-010). (2) Disconnect 52P-D029 from bulkhead. (3) Open door 35L (A1-F18AC-LMM-010). (4) Disconnect 52P-E007 from bulkhead. (5) Open door 13R (A1-F18AC-LMM-010). ON 161702 THRU 164278, disconnect 76P-F002E from Receiver-Transmitter RT-1250()/ARC No. 2. ON 164279 AND UP, disconnect 76P-F042E from bulkhead. (6) Using time domain reflectometer (A1-F18A()-WRM-000) and table 2, test wiring from: 52J-E007 pin 69 to 52P-D029 pin 57 52J-E007 pin 80 to 52P-D029 pin 69 Does wiring test good?.....	f	g


























Table 1. Multiple Terminal Fail Troubleshooting (Continued)

Procedure	No	Yes
f. Isolate defective aircraft wiring (A1-F18A()-WDM-000) from: 52J-E007 pin 69 to 52P-D029 pin 57 52J-E007 pin 80 to 52P-D029 pin 69 and do step k.....	-	-
g. Is aircraft 161702 AND UP?	h	i
h. Do substeps below: (1) Open door 33 (A1-F18AC-LMM-010). (2) Disconnect 52P-F003 from bulkhead. (3) If Laser Detector Tracker System installed, do substeps below: (a) Open Mounting Adapter MT-6082/ASQ-173 access door 2. (b) Disconnect 5W1P2 from Interconnecting Box J-3656/ASQ-173. (4) If NAVFLIR installed, do substeps below: (a) Open Mounting Adapter MT-6512/AAR-50 (b) Disconnect 5W1P2 from Digital Computer-Converter 61P-1805/AAR-50 (5) If Forward Looking Infrared System installed, remove Controller-Processor C-10661/AAS-38 (A1-F18AC-744-300, WP009 00). (6) Using time domain reflectometer (A1-F18A()-WRM-000) and table 2, test wiring from: 61J-P110B pin 20 to 52P-E007 pin 69 61J-P110B pin 21 to 52P-E007 pin 80 Does wiring test good?.....		
i. Repair defective aircraft wiring (A1-F18A()-WRM-000) from: 61J-P110B pin S001 to 52P-E007 pin 80 61J-P110B pin S002 to 52P-E007 pin 69 and do step k.....	-	-

Table 1. Multiple Terminal Fail Troubleshooting (Continued)

Procedure	No	Yes
j. Repair defective aircraft wiring (A1-F18A()-WRM-000) from: 52J-J029 pin 57 to 52J-J029 pin S007 52J-J029 pin 69 to 52J-J029 pin S008 and do step k.....	-	-
k. If disconnected, removed, or opened during this procedure, make sure the items listed below are connected, installed, or closed: (1) Door 35L (2) Door 13L (3) 52P-E007 (4) Door 10R (5) Door 3 (6) Door 33 (7) 05P02 (8) Controller-Processor C-10661/AAS-38 (9) 5W1P2 (10) 68P-E001A (11) 52P-F003 (12) 52P-D029 (13) Mounting Adapter MT-6082/ASQ-173 access door 2 (14) Door 13R (15) 76P-F002E (16) 76P-F042E (17) Mounting Adapter MT-6512/AAR-50 access door 2.....	-	-

Table 2. Avionic Mux Cable Parameters

Cable Number	Connector	Impedance (Ohms)	Dielectric Type	Cable Length (Inches)
U507AB	52J-E007 pin 111 to 60J-A001B pin 91	68	PTFE	331  1 337  2 309  3
U508AB	52J-E007 pin 110 to 60J-A001B pin 92	68	PTFE	302  4 331  1 337  2 309  3
U505Y	52J-E007 pin 69 to 52P-D029 pin 57	68	PTFE	302  4 210  5 217  2 212  4
U506Y	52J-E007 pin 80 to 52P-D029 pin 69	68	PTFE	460  6 451  7 210  5 217  2 212  4
U505AB	61J-P110B pin 20 to 52P-E007 pin 69	68	PTFE	460  6 451  7
U506AB	61J-P110B pin 21 to 52P-E007 pin 80	68	PTFE	145 145
LEGEND				
1  F/A-18A				
2  F/A-18B				
3  F/A-18C				
4  F/A-18D 163434 THRU 164272				
5  F/A-18A AND F/A-18C 161702 THRU 164278				
6  F/A-18C 164627 AND UP				
7  F/A-18D 164279 AND UP				

ORGANIZATIONAL MAINTENANCE

FAULT ISOLATION MANUAL

TROUBLESHOOTING PROCEDURE

This WP supersedes WP126 00, dated 1 August 1989.

Reference Material

Line Maintenance Access Doors.....	A1-F18AC-LMM-010
Wiring Repair with Parts Data, General Wiring Repair Procedures	A1-F18AC-WRM-000
Testing and Use of Time Domain Reflectometry Measurements.....	WP015 00
Wiring Repair with Parts Data, General Wiring Repair Procedures	A1-F18AE-WRM-000
Testing and Use of Time Domain Reflectometry Measurements.....	WP015 00
Mission Computer System	A1-F18AC-741-200
Component Locator.....	WP006 00
Mission Computer System	A1-F18AE-741-200
Component Locator.....	WP006 00

Alphabetical Index

Subject	Page No.
Table 1.....	1
Table 2.....	4

Record of Applicable Technical Directives

None

Table 1. Multiple Terminal Fail Troubleshooting

Support Equipment Required	
Part Number or Type Designation	Nomenclature
1502-04	Time Domain Reflectometer
74D420048-1001	TDR Adapter Kit
Materials Required	
None	
















Table 1. Multiple Terminal Fail Troubleshooting (Continued)

NOTE		
<p>Terminal fail codes indicate two malfunctions exist. Malfunctions on both avionic mux bus wires must exist for a terminal fail code to exist. (Example: Avionic mux bus 2X high and 2X low must be open to indicate a terminal fail). Troubleshooting procedures for terminal fails isolate to the malfunction nearest to Digital Data Computer No. 1 on the avionic mux bus. Additional troubleshooting may be required to isolate to the second defective wire/component.</p> <p>Avionic Mux Bus 2X Schematic (WP114 00) may be used as an aid when doing this procedure.</p> <p>For component locator, refer to A1-F18AC-741-200, WP006 00 or A1-F18AE-741-200, WP006 00.</p> <p>Malfunction is caused by aircraft wiring.</p>		
Procedure	No	Yes
<p>a. Do substeps below:</p> <p>(1) Open door 10R (A1-F18AC-LMM-010).</p> <p>(2) Disconnect 52P-D029 from bulkhead.</p> <p>(3) Open door 35L (A1-F18AC-LMM-010).</p> <p>(4) Disconnect 52P-E007 from bulkhead.</p> <p>(5) Open door 13R (A1-F18AC-LMM-010).</p> <p>ON 161702 THRU 164278, disconnect 76P-F002E from Receiver-Transmitter RT-1250()/ARC No. 2.</p> <p>ON 164279 AND UP, disconnect 76P-F042E from bulkhead.</p> <p>(6) Using time domain reflectometer (A1-F18A()-WRM-000) and table 2, test wiring from:</p> <p>52J-E007 pin 69 to 52P-D029 pin 57 52J-E007 pin 80 to 52P-D029 pin 69</p> <p>Does wiring test good?</p>		
<p>b. Isolate defective aircraft wiring (A1-F18A()-WDM-000) from:</p> <p>52J-E007 pin 69 to 52P-D029 pin 57 52J-E007 pin 80 to 52P-D029 pin 69</p> <p>and do step d.</p>	b	c
	-	-

Table 1. Multiple Terminal Fail Troubleshooting (Continued)

Procedure	No	Yes
<p>c. Repair defective aircraft wiring (A1-F18A()-WRM-000) from:</p> <p>ON F/A-18A AND F/A-18B,</p> <p>52J-J029 pin 57 to 52J-J029 pin S007 52J-J029 pin 69 to 52J-J029 pin S008</p> <p>ON F/A-18C 163427 THRU 163782,</p> <p>52J-J029 pin 57 to 77P-L001E pin S002 52J-J029 pin 69 to 77P-L001E pin S003</p> <p>ON F/A-18C 163985 AND UP,</p> <p>52J-J029 pin 57 to 77P-K001E pin S002 52J-J029 pin 69 to 77P-K001E pin S003</p> <p>ON F/A-18D,</p> <p>52J-J029 pin 57 to WTK001 pin 62 52J-J029 pin 69 to WTK001 pin 63</p> <p>and do step d.</p> <p>d. If disconnected, removed, or opened during this procedure, make sure the items listed below are connected, installed, or closed:</p> <p>(1) Door 35L</p> <p>(2) 52P-D029</p> <p>(3) 52P-E007</p> <p>(4) Door 10R</p> <p>(5) Door 13R</p> <p>(6) 76P-F042E</p> <p>(7) 76P-F002E.....</p>	-	-

Table 2. Avionic Mux Cable Parameters

Cable Number	Connector	Impedance (Ohms)	Dielectric Type	Cable Length (Inches)
U505Y	52J-E007 pin 69 to 52P-D029 pin 57	68	PTFE	210  1 217  2 212  3 460  4 451  5
U506Y	52J-E007 pin 80 to 52P-D029 pin 69	68	PTFE	210  1 217  2 212  3 460  4 451  5
LEGEND  1 F/A-18A AND F/A-18C 163427 THRU 164278  2 F/A-18B  3 F/A-18D 163434 THRU 164272  4 F/A-18C 164627 AND UP  5 F/A-18D 164279 AND UP				

ORGANIZATIONAL MAINTENANCE

FAULT ISOLATION MANUAL

TROUBLESHOOTING PROCEDURE

This WP supersedes WP127 00, dated 15 February 1992.

Reference Material

Line Maintenance Access Doors.....	A1-F18AC-LMM-010
Wiring Repair with Parts Data, General Wiring Repair Procedures	A1-F18A()-WRM-000
Testing and Use of Time Domain Reflectometry Measurements.....	WP015 00
Mission Computer System	A1-F18AC-741-200
Component Locator.....	WP006 00
Mission Computer System	A1-F18AE-741-200
Component Locator.....	WP006 00

Alphabetical Index

Subject	Page No.
Table 1.....	1
Table 2.....	4

Record of Applicable Technical Directives

Type/ Number	Date	Title and ECP No.	Date Incorp.	Remarks
F/A-18 AFC 184	-	Incorporation of Havequick/Sincgars Wiring and Mounting Provisions (ECP-MDA-F18- 0292R2)	15 Aug 94	-
F/A-18 AFC 185	-	Incorporation of Havequick/Sincgars (ECP- MDA-F18-0292R1A3R2)	15 Aug 94	-

Table 1. Multiple Terminal Fail Troubleshooting

Support Equipment Required	
Part Number or Type Designation	Nomenclature
1502-04	Time Domain Reflectometer
74D420048-1001	TDR Adapter Kit

Table 1. Multiple Terminal Fail Troubleshooting (Continued)

<p style="text-align: center;">Materials Required</p> <p style="text-align: center;">None</p> <p style="text-align: center;">NOTE</p> <p>Terminal fail codes indicate two malfunctions exist. Malfunctions on both avionic mux bus wires must exist for a terminal fail code to exist. (Example: Avionic mux bus 2X high and 2X low must be open to indicate a terminal fail). Troubleshooting procedures for terminal fails isolate to the malfunction nearest to Digital Data Computer No. 1 on the avionic mux bus. Additional troubleshooting may be required to isolate to the second defective wire/component.</p> <p>Avionic Mux Bus 2Y Schematic (WP114 00) may be used as an aid when doing this procedure.</p> <p>For component locator, refer to A1-F18AC-741-200, WP006 00 or A1-F18AE-741-200, WP006 00.</p> <p>Malfunction is caused by aircraft wiring.</p>		
Procedure	No	Yes
<p>a. Do substeps below:</p> <p>(1) Open door 13R (A1-F18AC-LMM-010).</p> <p>(2) ON 161702 THRU 163175 disconnect 76P-F002G from VHF/UHF Receiver-Transmitter No. 2.</p> <p>ON 163427 THRU 164278 BEFORE F/A-18 AFC 184, disconnect 76P-F002G from VHF/UHF Receiver-Transmitter No. 2.</p> <p>ON 163427 THRU 164278 AFTER F/A-18 AFC 184 AND BEFORE F/A-18 AFC 185, disconnect 76P-F042E from bulkhead.</p> <p>ON 163427 THRU 164278 AFTER F/A-18 AF C 184 AND F/A-18 AFC 185, disconnect 76P-F042E from VHF/UHF Receiver-Transmitter No. 2.</p> <p>ON 164279 AND UP BEFORE F/A-18 AFC 185, disconnect 76P-F042E from bulkhead.</p> <p>ON 164279 AND UP AFTER F/A-18 AFC 185. disconnect 76P-F042E from VHF/UHF Receiver-Transmitter No. 2.</p> <p>(3) Open door 10R (A1-F18AC-LMM-010).</p> <p>(4) Disconnect 52P-D029 from bulkhead.</p> <p>(5) Open door 13L (A1-F18AC-LMM-010).</p> <p>(6) Disconnect 83P-E001E from Digital Data Computer No. 1.</p>		













Table 1. Multiple Terminal Fail Troubleshooting (Continued)

Procedure	No	Yes
<p>(7) Disconnect 83P-E005 from left mux bus impedance matching network.</p> <p>(8) Using time domain reflectometer (A1-F18A()-WRM-000) and table 2, test wiring from:</p> <p>83P-E001E pin 23 to 52P-D029 pin 91 83P-E001E pin 24 to 52P-D029 pin 102</p> <p>Does wiring test good?.....</p>	b	c
<p>b. Repair defective aircraft wiring (A1-F18A()-WRM-000) from:</p> <p>ON 161702 AND UP,</p> <p>52P-D029 pin 91 to WTF001 pin 266 52P-D029 pin 102 to WTF001 pin 268</p> <p>ON 161353 THRU 161528,</p> <p>52P-D029 pin 91 to 83P-E001E pin 23 52P-D029 pin 102 to 83P-E001E pin 24</p> <p>and do step d.</p>	-	-
<p>c. Repair defective aircraft wiring (A1-F18A()-WRM-000) from:</p> <p>ON F/A-18A AND F/A-18B,</p> <p>52J-J029 pin 91 to 52J-J029 pin S009 52J-J029 pin 102 to 52J-J029 pin S010</p> <p>ON F/A-18C 163427 THRU 163782,</p> <p>52J-J029 pin 91 to 77P-L001G pin S002 52J-J029 pin 102 to 77P-L001G pin S003</p> <p>ON F/A-18C 163985 AND UP,</p> <p>52J-J029 pin 91 to 77P-K001G pin S002 52J-J029 pin 102 to 77P-K001G pin S003</p> <p>ON F/A-18D,</p> <p>52J-J029 pin 91 to WTK001 pin 65 52J-J029 pin 102 to WTK001 pin 66</p> <p>and do step d.</p>	-	-
<p>d. If disconnected, removed, or opened during this procedure, make sure the items listed below are connected, installed, or closed:</p> <p>(1) 52P-D029</p> <p>(2) 83P-E001E</p> <p>(3) 83P-E005</p>		

Table 1. Multiple Terminal Fail Troubleshooting (Continued)

Procedure	No	Yes
(4) Door 13R		
(5) 76P-F002G		
(6) 76P-F042E		
(7) Door 10R		
(8) Door 13L.....	-	-

Table 2. Avionic Mux Cable Parameters

Cable Number	Connector	Impedance (Ohms)	Dielectric Type	Cable Length (Inches)
U507A	83P-E001E pin 23 to 52P-J029 pin 91	68	PTFE	213  1 221  2 217  3
U508A	83P-E001E pin 24 to 52P-J029 pin 102	68	PTFE	216  4 213  1 221  2 217  3 216  4
LEGEND  1 F/A-18A  2 F/A-18B  3 F/A-18C  4 F/A-18D				

ORGANIZATIONAL MAINTENANCE

FAULT ISOLATION MANUAL

TROUBLESHOOTING PROCEDURE

This WP supersedes WP129 00 dated, 15 December 1987.

Reference Material

Line Maintenance Access Doors.....	A1-F18AC-LMM-010
Line Maintenance Procedures	A1-F18AC-LMM-000
Inertial Navigation, and Backup Attitude and Navigation Systems	A1-F18AC-730-500
Locator	WP003 00

Alphabetical Index

Subject	Page No.
Table 1.....	1

Record of Applicable Technical Directives

None

Table 1. INS Loses Attitude During Power Interruptions

Support Equipment Required	
NOTE	
Alternate item type designations or part numbers are listed in parentheses.	
Part Number or Type Designation	Nomenclature
77AN (260-6XLP)	Multimeter

Table 1. INS Loses Attitude During Power Interruptions (Continued)


<p align="center">Materials Required</p> <p align="center">None</p> <p align="center">NOTE</p> <p>INS Interconnect Schematic (A1-F18AC-730-500, WP004 00) may be used as an aid when doing this procedure.</p> <p>For component locator, refer to A1-F18AC-730-500, WP003 00.</p> <p>Malfunction is caused by one of the items below:</p> <p>Aircraft Wiring Electrical System Inertial Navigation Unit CN-1561/ASN-130A or Inertial Navigation Unit CN-1649/ASN-139 No. 8 Circuit Breaker/Relay Panel Assembly</p>		
Procedure	No	Yes
<p align="center"></p> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale.</p> <p>To prevent damage to aircraft wiring or equipment, make sure multimeter leads/jumper wires are installed on correct pins. When electrical power is off, 24vdc battery voltage exists on some pins of connectors listed below:</p> <p>52J-C159E pin t 68P-E001C pin Z</p> <p align="center">NOTE</p> <p>The question used in logic tree "Does continuity exist" means to test for the items listed below:</p> <ol style="list-style-type: none"> 1. Pin to pin test per procedural step. 2. Shorts to ground. 3. Shorts between surrounding pins on connectors. 4. Shorts between shield and conductors. 5. Shield continuity. <p>a. Do substeps below:</p> <p>(1) Make sure electrical power is off (A1-F18AC-LMM-000).</p>		

Table 1. INS Loses Attitude During Power Interruptions (Continued)

Procedure	No	Yes
(2) Open door 10L (A1-F18AC-LMM-010).		
(3) On no. 8 circuit breaker/relay panel assembly, is INS circuit breaker 68CBC009 open?	b	e
b. Was system maintenance code 115 set?	c	d
c. Troubleshoot electrical system. Refer to A1-F18AC-FRM-000, WP005 00 or A1-F18AE-FRM-000, WP005 00.	-	-
d. Replace Inertial Navigation Unit CN-1561/ASN-130A or Inertial Navigation Unit CN-1649/ASN-139 (A1-F18AC-730-300, WP004 00) and do step i.	-	-
e. Do substeps below:		
(1) Open door 13L (A1-F18AC-LMM-010).		
(2) Disconnect 68P-E001C from Inertial Navigation Unit CN-1561/ASN-130A or Inertial Navigation Unit CN-1649/ASN-139.		
(3) Close circuit breaker 68CBC009.		
(4) Apply electrical power (A1-F18AC-LMM-000).		
(5) Does circuit breaker open?	d	f
f. Do substeps below:		
(1) Turn off electrical power (A1-F18AC-LMM-000).		
(2) Disconnect 52P-C159E from no. 8 circuit breaker/relay panel assembly.		
(3) Does continuity exist from 52P-C159E pin t to 68P-E001C pin Z?	g	h
g. Isolate defective aircraft wiring (A1-F18A()-WDM-000) and do step i.	-	-
h. Isolate between no. 8 circuit breaker/relay panel assembly wiring and circuit breaker 68CBC009 (A1-F18AC-420-300, WP030 00) and do step i.	-	-
i. If disconnected, removed, or opened during this procedure, make sure the items listed below are connected, installed, or closed:		
(1) Inertial Navigation Unit CN-1561/ASN-130A or Inertial Navigation Unit CN-1649/ASN-139		
(2) No. 8 circuit breaker/relay panel assembly		

Table 1. INS Loses Attitude During Power Interruptions (Continued)

Procedure	No	Yes
(3) 52P-C159E		
(4) 68P-E001C		
(5) Door 10L		
(6) Door 13L.....	-	-